INFLUENCE OF PHARMACISTS' EXPANDED SCOPE OF PRACTICE ON PHYSICIAN COLLABORATION IN COMMUNITY PHARMACY

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ABSTRACT

The Canadian Healthcare System is overburdened and requires fundamental changes for its continued sustainability. One possible solution is healthcare professionals working more collaboratively and to their maximum scope of practice. Saskatchewan pharmacists have had significant expansion in their scope of practice in the last decade and correspondingly, expectations of collaboration. This study's primary objective was to explore the influence of pharmacists' expanded scope of practice (ESoP) on physician collaboration in the community pharmacy setting. This thesis proposes a new model, the Community Pharmacists Collaboration Model (CPCM), for analysis of community pharmacists' collaboration derived from the Collaborative Working Relationship, Hudson's, Artimage's, and Spectrum of Collaboration models. It uses this model to examine collaboration in the context of a community pharmacy setting, taking into consideration pharmacy partnerships and collaborative practice agreements.

An online questionnaire was emailed to all 1165 practicing community pharmacists in Saskatchewan. The questionnaire acquired data on: participant demographics, ESoP engagement, most beneficial activities, influence on physician collaboration, and strategies for fostering collaboration. The questionnaire response rate was 15.7%. Pharmacists suggested ESoP positively influenced communication and collaboration, pharmacist utilization, clinical management, and pharmacist-physician relationships. ESoP may play a role at increasing the frequency and quality of exchanges between pharmacists and physicians, however, did not appear to improve the opportunity for verbal or written agreements. The most effective strategy identified for fostering collaboration was maximizing exchanges with physicians, especially verbal exchanges. Lack of physician engagement and restrictions to direct communication channels with physicians were hindrances.

Pharmacists' utilization of ESoP activities and its subsequent correspondence may be an avenue in which to improve collaboration with physicians. The CPCM model could prove to be a useful tool to aide in the understanding of collaborative practice in the community pharmacy setting. Further exploration into community pharmacy collaboration, particularly regarding physician engagement, will prove advantageous.

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CHAPTER ONE: INTRODUCTION

Background to the Study

The Canadian Pharmacist Association (CPhA) released a report in 2016, *Toward an optimal future: Priorities for action*, indicating that the landscape of community pharmacy has experienced extensive changes over recent years, both locally and internationally. "The role of the pharmacist has transitioned beyond dispensing medications to include direct patient care roles in primary care that complement the skill set of the physician" (Scott, Heck, & Wilson, 2017, para. 22). Regulatory changes for licencing technicians have resulted in less dispensing functions by pharmacists and more technicians assuming the role (CPhA, 2016b). The traditional functions of a pharmacist, such as compounding, have largely been replaced by large-scale manufacturers (Jorgenson, 2012). "The primary role of the pharmacist is evolving from a focus on dispensing medications to taking increased responsibility for and facilitating optimal medication use through collaboration" (Kelly et al., 2013, p. 218). The International Pharmaceutical Federation (FIP, 2009) found a global trend toward more clinical, patient-centered care with enhanced responsibilities and accountabilities. In Canada, this trend is occurring throughout the health system and the CPhA is addressing this need through the creation of pharmacy guidance documents. However, implementing this trend is difficult because Canada's healthcare system is under extreme pressure and faces challenges to its future sustainability (CPhA, 2016b). Population health research suggests these stresses will likely continue to grow as the population ages, the prevalence of chronic disease increases, and drug costs continue to rise (CPhA, 2016b). Furthermore, as reforms push the Canadian healthcare system toward greater use of community-based models of care, community pharmacists will have increased expectations to work in a more coordinated and collaborative manner" (Dobson et al., 2006). The CPhA developed a national strategy called a Blueprint for Pharmacy to guide

ways pharmacists can adapt their role to enhance drug therapy outcomes through patient centered care. The CPhA report (2016b) indicated that:

> Over the last 30 years, every healthcare profession has examined ways their profession can evolve and change how they work with other healthcare providers in order to focus on the patient, provide greater efficiencies in the delivery of services and support better health outcomes for Canadians. The need for information sharing, patient engagement and interprofessional collaboration has never been greater. (p. 10)

The impact of these changes is now being reflected in community pharmacy practice through expansion of pharmacists' scope of practice.

Legislative and regulatory changes in Canada support expansion of pharmacists' scope of practice (Donald et al., 2017). Since every province has its own body for registering and regulating pharmacy practice, every province has their own response to approving expanded role activities like renewing, adjusting, initiating or substituting prescriptions, as well as ordering and interpreting laboratory tests (Donald et al., 2017). Saskatchewan increased funding of more pharmacist-led clinical activities and passed legislation to expand the scope of practice of community pharmacists, such as immunizations, prescribing and ordering and accessing lab results (CPhA, 2015). When compared to other provinces and territories, Saskatchewan has some of the broadest changes to pharmacists' scope of practice in Canada (CPhA, 2020). Furthermore, many of the amendments made to The Pharmacy Act within the last decade expanding pharmacists' scope of practice are expected to be implemented by working collaboratively with doctors and other health professionals (Government of Saskatchewan, 2014). This increased opportunity theoretically has the potential to expand the degree and quality of interprofessional collaboration between community pharmacists and physicians.

The benefits of effective teamwork can positively affect patient safety, patient outcomes, and is globally recognized as an essential tool for the delivery of effective patient-centered health care (Babiker et al., 2014). “The evolution in health care and a global demand for quality patient care necessitate a parallel health care professional development with a greater focus on patient centred teamwork approach” (Babiker et al., 2014, p. 1). Healthcare professionals, including pharmacists, have been called upon to work more collaboratively in their practice (CPhA, 2016b). Both physicians and pharmacists agree that collaborative practice can optimize patient care and health outcomes and both groups want more collaboration opportunities (Kelly et al., 2013). One such opportunity is Expanded Scope of Practice (ESoP), which allows pharmacists to be more involved in community health care.

In the broad frameworks and context of allied health practice of the individual professions, scope of practice refers to the range of roles, functions, responsibilities, and decision making capacity which the professional performs in the context of their practice (Sarrah.org.au, n.d.). Pharmacy ESoP refers to the legislative and regulatory changes that broaden the role and responsibilities of practicing pharmacists (Tannenbaum & Tsuyuki, 2013). Under authority of these new regulations pharmacists can provide additional services such as, initiating drug therapy, adjusting prescriptions, and administering a drug by injection (Tannenbaum & Tsuyuki, 2013). Currently there is variability in the adoption of pharmacists’ ESoP services across Canada, since each province or territory is responsible for registering and regulating pharmacy practice (Tannenbaum & Tsuyuki, 2013).

Evaluating community pharmacists’ perspective on how collaboration has changed between themselves and physicians because of the advances to pharmacists’ scope of practice, could provide a greater understanding of its influence on the collaborative relationship.

Additionally, information could be gathered on pharmacists' level of engagement in ESoP activities and how they compare to traditional activities. Community pharmacists may also offer valuable insight into effective ways to enhance collaboration between physicians. Having a richer understanding in these areas has the potential to guide changes in pharmacy practice guidelines and legislation related to ESoP services. If expanding the pharmacists' scope of practice results in improved interprofessional collaboration with physicians or positively influences community pharmacy practice, further support may be garnered, with the ultimate benefit of improving the health and wellbeing of members in our community.

Purpose of the Study

The purpose of the study was to determine how changes to Saskatchewan pharmacists' scope of practice have influenced interprofessional collaboration between community pharmacists and physicians. The study gathered data on the most influential expanded practice activities and access, and perceptions regarding engagement compared to traditional activities. Additionally, the study obtained pharmacists' perspectives on strategies to improve collaboration.

Research Questions

The overarching research question was: how have changes to pharmacists' scope of practice influenced interprofessional collaboration between community pharmacists and physicians? The following research sub-questions provide additional direction for this study:

1. What level of engagement do community pharmacists have in ESoP activities compared to traditional pharmacy activities, and which are most impactful to collaboration?

2. How have ESoP activities influenced interprofessional collaboration between Saskatchewan community pharmacists and physicians?

3.What strategies do community pharmacists find effective for fostering collaboration?

Significance of the Study

Multiple studies worldwide have demonstrated that interprofessional collaboration can increase functioning in healthcare and facilitate improved health care outcomes (Zwarenstein, Goldman, & Reeves, 2009). Working in a multidisciplinary fashion can foster "improved patient care through increased opportunities for communication, sharing of knowledge, cross-fertilisation of ideas and a sense of partnership" (Weiss, Grey, Family, Tsuyuki, & Sutton, 2018, p.1). Community pharmacists are often forgotten members of healthcare teams, despite their potential to play a significant role in healthcare; therefore establishing collaborative relationships with general practice has proven difficult (Weiss et al., 2018). Doucette, Nevins, and Mcdonough, (2005) indicted that if pharmacists are going to have a positive impact on patient outcomes achieved with drug therapy, they will likely need to work more closely with physicians in managing medication therapy more effectively (Doucette et al., 2005). Kelly et al. (2013) stated:

> The organized structure of institutional settings facilitates communication and collaboration between health care professionals. Hospital pharmacists have demonstrated their ability to improve care by decreasing mortality and morbidity, reducing health care costs. However, collaborative practice in the community is more challenging (p. 219)

The expansion to pharmacists' scope of practice in recent years may create new opportunities for enhanced interprofessional collaboration, considering they are expected to be implemented in a collaborative manner with doctors and other healthcare professionals (Government of Saskatchewan, 2014). However, there appears to be limited information about ESoP influence on the degree and quality of interprofessional collaboration with physicians. Few Canadian studies

have explored the collaborative relationship between community pharmacists and physicians; therefore future research is warranted to gather the impact of changes to the pharmacist scope of practice (Kelly et al., 2013). Community pharmacists may offer valuable insight into how expansion of their role has affected collaboration with physicians and offer ideas and strategies for more robust collaboration.

Researcher's Positionality

My interest in pharmacy or perhaps healthcare in general, was apparent from a very early age. As a child I always aspired to help people. I remember making special healing potions, lining up all my stuffed animals, each who had an ailment of some type, and curing them one by one. I was the neighbourhood pet and small animal rescuer who tried to nurture any living creature back to good health in make-shift cages in my backyard. I likely developed a false sense of confidence in my 'healing abilities' when my parents reported that the mauled gopher, bird with a broken wing, or whatever prairie animal being treated at the time, had miraculously sprung back to health while I was sleeping and released into the wild to enjoy their days. This solidified the perception of myself as a healthcare provider.

Growing up and attempting to fit in and be accepted was difficult. I often felt different, de-valued, and outcast by people. The experience provided me with a deep sense of compassion and an understanding of what it is like to feel alienated, rejected, and unappreciated. The early and sustained impact of these experiences were so profound that it impelled me to identify with marginalized people or groups through out my life. It also fostered a very strong sense of advocacy for people or groups that are treated unfairly or with disregard. This desire for inclusion and equality remains a powerful driving force that guides many of my decisions and aspirations in my life and career.

During my career, I worked in a variety of roles within the profession of pharmacy, the majority being community pharmacy. I worked in a busy community pharmacy setting and faced the difficulty of trying to incorporate patient care activities into workflow. I had the opportunity to work with inspiring pharmacists who pushed the boundaries of pharmacist's scope of practice. Many fought tirelessly for new and innovative ways to work collaboratively with other professionals and help establish the community pharmacist as a valuable team member. My work in a clinical pharmacist role within a community pharmacy provided the opportunity to create new programs, form partnerships in the community, and explore creative ways to maximize the use of existing provincially funded services. These activities inadvertently challenged me to discover ways pharmacists could better collaborate interprofessionally and utilize their knowledge and skills; the success of the programs and expansion of services largely depended upon it. Working as a clinical pharmacist provided insight into how effective interprofessional collaboration could achieve positive patient outcomes, improve efficiencies in the delivery of healthcare, and help establish the pharmacist as a valuable member of an interprofessional team.

Unfortunately, I also experienced the challenges faced by community pharmacists to collaborate interprofessionally. Barriers such as lack of time and training, attitudes around collaboration, and inadequate funding of pharmacist clinical services, often impeded progress. Quite often I witnessed pharmacists be ostracized, stereotyped, and their contributions minimized or discounted. There seemed to be a misconception and lack of awareness by some healthcare professionals as to the contribution and skill set pharmacists had to offer to patients and the health system in general. Furthermore, there appeared to be a reluctance to collaborate outside of the traditional healthcare teams and structures within the health region.

My position working at the College of Pharmacy and Nutrition at the University of Saskatchewan as coordinator of the pharmacy skills and experiential learning programs, provided exposure to the high priority placed on expanding the skill set of students in interprofessional collaboration. I helped facilitate a variety of different programs and activities aimed at increasing pharmacy students' collaborative opportunities with students from other healthcare disciplines. I learned that pharmacy graduates have more training in interprofessional collaboration than ever before, along with new opportunities to practice pharmacy with the expansion of the pharmacists' scope of practice. I witnessed first-hand the talent, enthusiasm, and desire to help people from a new generation of pharmacy students. These positive attitudes reminded me of my own passion and reignited my drive to improve the opportunities available for new pharmacists to work interprofessionally and be accepted as valuable members of the healthcare team.

In the past ten years the Saskatchewan College of Pharmacy Professionals (SCPP) in conjunction with the Saskatchewan government, have dramatically expanded the pharmacists' scope of practice and with it associated training and funding of services (Government of Saskatchewan, 2014). Given the recent changes in the pharmacy landscape, I am interested in examining the influence pharmacists' ESoP has on interprofessional collaboration with physicians. Additionally, I am curious about pharmacists' level of engagement, determining which ESoP activities have affected collaboration the most, and gaining insight into effective strategies for improved collaboration.

Delimitations

The study had the following delimitations:

- Perspectives are from community pharmacists and not other healthcare professions, such as physicians.

- Only pharmacists connected to a community pharmacy were included in the study. Community pharmacists and pharmacies are the target of the study.
- Pharmacists included in the study had to be practicing pharmacists as determined by SCPP. The study aimed to get perspectives from pharmacists who have real world experience with ESoP activities and collaborations with physicians. Data should be reflective of current pharmacy practice.

Limitations

The study had the following limitations:

- Pharmacists are busy professionals; they may not participate in the questionnaire or may not go in depth with some of the answers because of that context.
- My past and current relationships in community pharmacy could influence participation in the study or result in bias in responses.
- Participants may provide socially acceptable answers because of their position or employment situation, even though they were informed the data is handled confidentially.

Assumptions

The study had the following assumptions:

- Participants will clearly understand questions on the questionnaire.
- Participants can accurately account for the quantity and appropriately assess the type of collaboration in which they have been involved.
- Participants will be honest with their opinions and experiences.

Definitions

The following definitions are provided for key terms used in the study.

Advanced Practice: A practice that is so significantly different from that achieved at initial licensure that it warrants recognition of the expertise of the practitioner and the education, training and experience from which that capacity was derived (CPhA, 2016b, p.12).

Collaboration: Collective action toward a common goal. It includes relationships and interactions between health professionals regardless of whether or not they perceive themselves as part of a team. Collaboration can be viewed as a spectrum, depending on the type of care required (Oandasan et al., 2006).

Collaborative Care: "A joint communicating and decision-making process with the goal of satisfying the patient wellness and illness needs while respecting the unique abilities of each professional" (Makowsky et al., 2009, p.169).

Collaborative Practice: "A process which includes communication and decision making, enabling a synergistic influence of grouped knowledge and skills. Elements of collaborative practice include responsibility, accountability, coordination, communication, cooperation, assertiveness, autonomy, and mutual trust and respect" (Bridges, Davidson, Odegard, Maki & Tomkowiak, 2011, para. 6).

Differentiation: The state of segmentation of the organizational systems into subsystems, each of which tends to develop particular attributes in relation to the requirements posed by it relevant external environment (Lawrence & Lorsch, 1967).

Exchanges: Physicians and pharmacists exchanging permission, information and responsibility for patient care (Randal et al., 2001).

Integration: "the process of achieving unity of effort amount the various subsystems in the accomplishment of the organization's task" (Lawrence and Lorsch, 1967).

Partnership: A shared commitment, where all partners have a right and an obligation to participate and will be affected equally by the benefits and disadvantages arising from the partnership (Carnell & Carson, 2005).

Pharmaceutical Care: Involves taking direct responsibility for patients and their disease states, medications, and management of each to improve overall patient outcomes (CPhA, 2016b, p.16).

Pharmacist Collaborative Practice Agreements (CPA): CPA create a formal practice relationship between pharmacists and other health care practitioners, whereby the pharmacist assumes responsibility for specific patient care functions that are otherwise beyond their typical "scope of practice", but aligned with their education and training. These patient care services can include initiation and modification of drug therapy (The American College of Clinical Pharmacy, 2015).

Pharmacy Expanded Scope of Practice: Pharmacy ESoP refers to the legislative and regulatory changes that broaden the role and responsibilities of practicing pharmacists. Under authority of these new regulations pharmacists can provide additional services such as, initiating drug therapy, adjusting prescriptions, and administering a drug by injection (Tannenbaum & Tsuyuki, 2013).

Scope of Practice (of an Allied Health Professional): The broad frameworks and context of allied health practice of the individual professions including: (1) the range of roles; (2) functions and responsibilities; and (3) decision making capacity which the professional performs in the context of their practice. (Sarrah.org.au, n.d.)

These definitions will serve to provide some context to terms used throughout the preceding chapters to aid in a clearer understanding of researcher's intensions.

Organization of the Thesis

The objective of the study is to examine the influence of pharmacists' ESoP on physician collaboration in community pharmacies. Chapter One provides an orientation into the landscape of community pharmacy in relation to recent changes to pharmacy practice. Readers are given some context with an overview of the current pharmacy environment and background about the researcher's experience and interest in the topic. Goals and objectives of the study are presented, as well as its significance in the field. Chapter One closes with fundamental study information and definitions used throughout the rest of this document to help frame the upcoming information in Chapter Two.

Chapter Two is arranged to provide readers with a foundation of relevant topics related to the research. Readers are guided through some background on community pharmacy practice, the changes to pharmacist scope of practice and the significance of those changes. Next, the topic of interprofessional practice and collaboration will be discussed and its relation and importance, as well as associated challenges. The reader is presented with three different theories or models of collaboration. The last stage of Chapter Two ties all elements of pharmacist ESoP and physician collaboration by presenting a theoretical model based on the theories presented. The model provides insight into the conceptual design and directs the study design discussed in Chapter Three.

Chapter Three provides background about how the researcher chose to design their study to achieve their stated objectives. The choice of methodology is discussed, along with the theoretical underpinnings guiding the study design. Relevant details about the study are provided including information about participants and the study tool utilized. Discussion of data collection and analysis will be included along with justification of selections. The last section of Chapter

Three discusses strategies used to enhance the quality of the study by addressing trustworthiness of data and ethical considerations. The chapter aptly prepares readers to understand the data presented in Chapter Four. This chapter contains a description of the study's findings and their relevance, presented through a series of text, graphs, and tables. Chapter Five examines the data in more depth and connects the findings back to the literature, and to the conceptual framework, and provides some concluding thoughts.

CHAPTER TWO: LITERATURE REVIEW

Background to the Study

The Canadian Pharmacist Association (CPhA) (2016b) suggested a stressed and overburdened Canadian healthcare system is a main driving force for expansion of scopes of practice and progression toward person-focused care. Population health research indicated that stress on the healthcare system will continue to grow as the rates of chronic disease increase, the population ages, and technological and pharmaceutical innovations drive up costs (CPhA, 2016b). Rather than pouring more money into the healthcare system, focusing on fundamental changes in how healthcare is organized, financed, and delivered will likely lead to improvements in access to healthcare and overall health outcomes (CPhA, 2016b). All healthcare professions are currently evaluating how their profession can evolve and work with other healthcare providers to focus on the patient, provide greater efficiencies in the delivery of services, and support better health outcomes for Canadians (CPhA, 2016b). A 2016 Review of Pharmacy Services in Canada and the Health and Economic Evidence by the CPhA stated that pharmacists play an integral role in mitigating healthcare expenses and improving health outcomes. As a result, each province and territory has taken steps to expand the pharmacists' scope of practice (CPhA, 2016a). Additionally, Canadian pharmacy organizations have responded by providing reports to guide pharmacy stakeholders on the expectations and roles the pharmacy profession should take in helping address patient and healthcare system needs.

In 2015 the CPhA reviewed the formalized document known as *The Blueprint for Pharmacy* to outline the vision for Pharmacy in Canada and discuss its evolution in relation with the changes to pharmacists ESoP. The document stated that pharmacists and technicians are essential to emerging healthcare models and therefore should practice to the full scope of their knowledge and skills." (CPhA, 2015). They indicated that pharmacists should 1) manage drug

therapy in collaboration with patients, caregivers and other healthcare providers; 2) initiate, modify and continue drug therapy (e.g. through practice collaborative agreements, delegated or prescriptive authority); and 3) conduct practice research and contribute to evidence-based healthcare policy and best practices in patient care (CPhA, 2015).

These recommendations formulated over a decade ago provided direction and created the necessary foundation for subsequent practice and legislative changes to pharmacists' expanded scope of practice (ESoP).

In 2016 the Canadian Pharmacist Association released another report titled, *Toward an optimal future: Priorities for action*. Its purpose was to facilitate the identification and communication of goals, actions, and responsibilities to move the profession forward and enable optimal scopes and practices for the profession of pharmacy in Canada. It stated, "The global trend for pharmacy continues toward a more clinical, patient-focused profession, with enhanced responsibilities and accountabilities for pharmaceutical care in clinical environments" (CPhA, 2016b, p.11). They acknowledged that the profession of pharmacy has undergone significant changes in Canada and worldwide. Both pharmacists and technicians are working in advanced roles that provide value to other healthcare professionals, patients, and the broader healthcare system. Backed by regulatory changes, the pharmacist's role is evolving away from dispensing medications and toward direct patient care (CPhA, 2016b). The report states that even though there is progress in this area and much championing for advancing practice, many pharmacists are lagging in provision of pharmacy patient care services. The CPhA (2016b) acknowledged, "unique barriers exist in different settings and that uptake of advanced practice varied greatly between jurisdictions" (p. 3). They argued that the pharmacy profession is an untapped resource for addressing healthcare system needs, as well as, healthcare needs of Canadians.

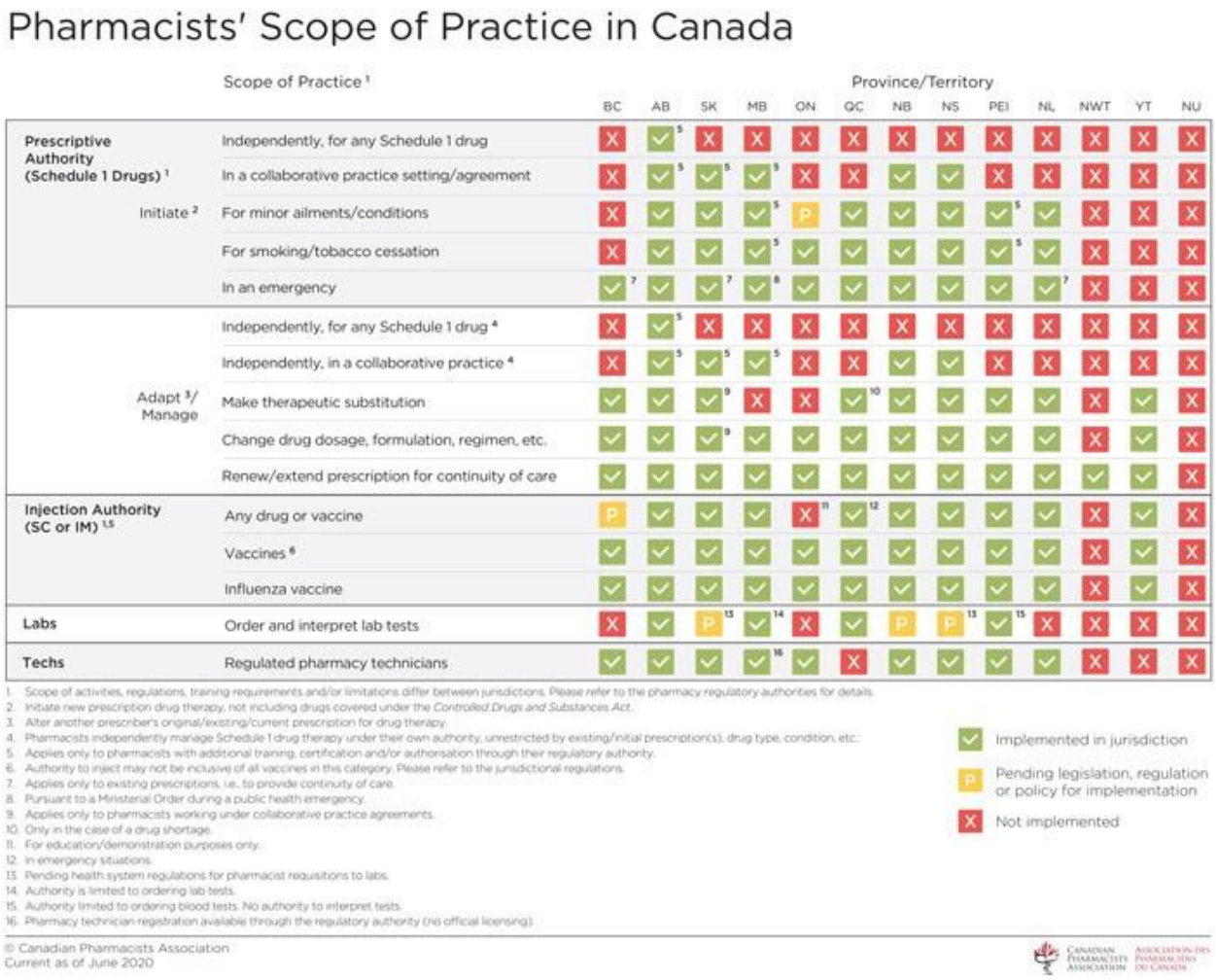
According to the CPhA (2016b) report, pharmacists are considered the most accessible healthcare providers and have a unique body of knowledge and skills, making them well-positioned to provide solutions to many of Canada's healthcare system challenges. "The pharmacy profession has experienced extensive changes in recent years, but more needs to be done to support pharmacy professionals embracing their full scopes of practice in order to respond to health system needs in Canada" (CPhA, 2016b, p.11). Both physicians and pharmacists agree that collaborative practice can optimize patient care and health outcomes (Kelly et al., 2013). Exploration into pharmacists' ESoP in community practice and collaboration with physicians could provide valuable insight into the contribution community pharmacists are making to the broader goals of improved health outcomes for Canadians and healthcare system efficiencies.

Expanded Scope of Practice

The role of the pharmacist is continuing to evolve away from traditional functions like dispensing, and toward taking increased responsibility for facilitating optimal medication use through collaboration (Kelly et al., 2013). Research from the International Pharmaceutical Federation (FIP) (2009) found that there was a global trend toward more clinical, patient-centered care with enhanced responsibilities and accountabilities. Labrie (2015) indicated that much scientific literature shows benefits of expanding the pharmacists' role to the health care system, such as improved access to care, improved quality of care, and numerous economic savings. Conscious of the benefits that pharmacist services can bring, some provincial governments have delegated certain tasks that were traditionally the responsibility of physicians to pharmacists (Labrie, 2015). The range of enhanced authority supporting pharmacist-driven clinical services varies widely internationally, but also significantly within Canada (FIP, 2009) since Canada has no national health system. Reimbursement for clinical pharmacy services, are

mainly comprised of 14 single payer systems. Therefore, pharmacists have a range of activities and associated funding related to their scope of practice which differs from one province to the next. Below is a chart created by the Canadian Pharmacist Association (CPhA) highlighting provincial differences in scope of practices as of June 2020.

Table 2.1 *Pharmacists Expanded Scope of Practice Among Canadian Provinces and Territories (Canadian Pharmacists Association, 2020)*



The CPhA chart categorizes pharmacists' ESoP into four general areas: prescriptive authority, injection authority, labs, and technician regulation. This general layout acts as a basis for comparison of pharmacists' scope of practice from one province or territory to the next. Out

of the four general categories are 15 sub-categories with more specific activities listed. Based on the chart the largest pharmacist ESoP is in Alberta with 15/15 activities implemented, followed by 12/15 activities implemented for Saskatchewan and New Brunswick. Although the chart provides a general glimpse into ESoP nationally, it does not provide detail about the large variances within each sub-category from province to province, such as minor ailment prescribing.

Saskatchewan pharmacists have one of the largest scopes of practice compared to other provinces (CPhA, 2020) and thus it serves as a prime location to evaluate pharmacist collaboration in relation to the newly appointed changes in practice and subsequent clinical services. Twelve years have now passed since *The Blueprint for Pharmacy* was released and the profession has had exponential growth in scope of practice, particularly in Saskatchewan (CPhA, 2015). Rigby (2010) suggested that given the changes in the pharmacists' role toward more patient-centered care, the traditional relationship between physician and pharmacist may no longer be appropriate to ensure safety, effectiveness, and adherence to therapy. Now seems like an ideal time to investigate the influence this change has had on collaboration with physicians and community pharmacy practice. Many pharmacists have experienced what community pharmacy practice entailed before ESoP activities were implemented. Therefore, they may offer valuable insight into its influence, particularly in relation to physician collaboration.

Benefits of Expanded Scope of Practice

The World Health Organization (as cited by CPhA, 2016b) suggested that the shortage of healthcare workers worldwide would increase from a 7.2 million deficit to 12.9 million by 2035. In Canada, five million Canadians do not have access to a family physician due to a physician shortage (CPhA, 2016b). Access to quality healthcare is a particular concern in rural settings,

such as those in Saskatchewan, where one-third of the population lives in rural areas (Gauvin, Lavis, & McCarthy, 2015). Expanding the pharmacists' role and practicing care that is more advanced is one way to address healthcare workers shortages (CPhA, 2016a). "Internationally, pharmacists are increasingly integrated into front-line services and collaborate with doctors and other health professionals to improve the efficiency of the health care system and access to care" (Labrie, 2015, p.2). Liaw and Peterson (2009) surmised that pharmacists can improve prescribing practices, reduce medication costs and health-care utilization, along with contributing to clinical improvements in chronic diseases like diabetes, cardiovascular disease, and psychiatric conditions.

The demand on the healthcare system and healthcare professionals is expected to increase as our population ages (CPhA, 2016b). More complex care needs, increased number of drug therapies, patient demand, and deficiencies in the healthcare system are increasing the need for more pharmaceutical care (CPhA, 2016b). Many countries have created pharmacist run programs designed to manage chronic diseases such as hypertension, asthma, and diabetes (Labrie, 2015). Increased pharmaceutical care could improve compliance, decrease medication errors and result in better chronic disease management (CPhA, 2016b). In Canada, for example, having hypertension managed in community pharmacies could lead to lower blood pressure outcomes and save an estimated $70 million dollars as a whole for the public health care system (Labrie, 2015). Additional areas potentially benefitting from pharmacists' ESoP are comprehensive medication reviews, minor ailment management, immunizations, expanded clinical services to improve access and safety, transitions in care, education, behavioural counselling, and preventative care services (CPhA, 2016b).

An example of the beneficial effects of pharmacists' ESoP is in minor ailment management. Pharmacists assessing patients, helping manage minor conditions or prescribing a medication for its management could avoid costly physician or emergency room visits. The CPhA (2016b) referenced a report by the Health and Welfare Commissioner from 2014 that claimed upward of 60% of hospital emergency room visits were attributed to minor conditions that could be treated elsewhere, such as a pharmacy, thereby reducing wait times, saving healthcare system dollars and potentially increasing access to care. The CPhA (2016b) report includes an estimate from the Ontario Pharmacists Association (2009) suggesting maximizing pharmacists' scope in this area could yield an economic saving of 4.7 to 14 million dollars per year. Another projection done in 2013 by the British Columbia Pharmacists Association estimated a 32 million dollar per year saving by transferring treatment of minor ailments from physicians to pharmacists (CPhA, 2016b). Labrie (2015) speculated that programs expanding the pharmacists' role can alleviate the physician workload, thereby saving an estimated 23 million Canadian dollars per year. From a system and economic standpoint alone, it may prove advantageous to determine optimal implementation strategies, including effective collaboration with other healthcare professionals.

Expanded Scope of Practice in Saskatchewan

Background

There are 1755 practicing pharmacists in Saskatchewan, with approximately 1183 of those working in 360 community pharmacies, in over 80 communities in Saskatchewan (Saskatchewan College of Pharmacy Professionals, 2020). This figure translates to community pharmacists accounting for 67% of all pharmacists positions in Saskatchewan. Over the last twelve years, Saskatchewan pharmacists have experienced an unprecedented amount of

legislative changes to The Pharmacy Act expanding their scope of practice, with the majority of changes affecting community pharmacy practice (Bareham, 2016). Subsequently, as the pharmacist role continues to expand, so too does that of the pharmacy technician (CPhA, 2016b). Saskatchewan currently has registered technicians practicing provincially, which potentially free up the pharmacist for more clinical related opportunities (CPhA, 2016b).

In 2011, Saskatchewan pharmacists were given the authority to prescribe medications for specific minor ailments, provide emergency supplies of prescribed medications, and extend refills on existing prescriptions while working in a collaborative practice environment (Government of Saskatchewan, 2014). In 2014 Health Minister Dustin Duncan introduced another set of legislative amendments to The Pharmacy Act of 1996 that further expanded the scope of practice for Saskatchewan pharmacists (Government of Saskatchewan, 2014). Implemented in 2015, these amendments authorized pharmacists to administer vaccines and other drugs, as well as, order, access, and use laboratory tests when working in collaboration with physicians.

Expanded Scope of Practice/Advanced Practice Activities and Reimbursement

In the last twelve years, Saskatchewan pharmacists have been granted a wide range of ESoP and professional practice activities. To best examine the influence of pharmacist ESoP activities, it is pertinent to have a clear description of what ESoP services are. The 2016 CPhA report *Review of pharmacy services in Canada and the health and economic evidence* provided a brief description of the services. In 2015, the PAS also created a chart of funded professional services in Saskatchewan. Based on the above sources, the following chart provides an overview of the specific ESoP and advanced practice activities currently in place in Saskatchewan, along with their associated government funding.

Table 2.2 *Saskatchewan Pharmacists Expanded Scope of Practice Activities*

Expanded Scope of Practice	Description	Remuneration
Renew/Extend Prescriptions for Continuity of Care	Pharmacists can renew a prescription without prior prescriber consent, to ensure continuity of care. Pharmacists can fill up to 3 months of a medication and must update the prescriber after doing so.	$6
Change Drug Dosage/Formulation	To enhance patient outcomes, pharmacists can provide a patient assessment and adapt a prescription to change the dose, formulation, or regimen of the prescription.	$6
Make Therapeutic Substitutions	To best suit the needs of the patient, pharmacists can make a therapeutic substitution to another drug, provided the drug falls within the same therapeutic class.	$6
Initiate Prescription Drug Therapy	Pharmacists can have prescriptive authority for any schedule 1 drug, excluding controlled drugs and substances, within or under a practice collaborative agreement. In the case of an emergency, where there is an immediate need but no existing prescription, pharmacists may also initiate Schedule 1 prescription drug therapy.	Emergency supplies Only - $10
Prescribe for Minor Ailments	Pharmacists can prescribe Schedule 1 drug therapy for the treatment for 26 specific minor ailments outlined in the jurisdictional legislation/regulation.	$18
Administer a Drug by Injection	Pharmacists can administer a drug or substance by injection. This includes most routine injections or immunizations (most commonly influenza). Specific regulations and restrictions apply.	Influenza & Depo-Provera etc. - $13
Order/Interpret Lab Results	For the purpose of medication monitoring, pharmacists have authorization to order, receive, and interpret the results of laboratory screening. Implementation is pending legislation, regulations, standards of practice, and/or education.	
Medication Assessments	To increase medication adherence and compliance, avoid harmful interactions, and de-prescribe. Pharmacists can provide core medication assessment and review via the Saskatchewan Medication Assessment Program (SMAP)	$60

Smoking Cessation Services	Counselling to assist in reduction and discontinuation use of tobacco via the PACT program (Partnership to Assist in the Cessation of Tobacco).	$2/min $180 max/year

Adapted from PAS 2015 Ministry of Health, Drug Plan and Extended Benefits Branch Funded Professional Services in Saskatchewan and CPhA 2020 report A Review of Pharmacy Services in Canada and the Health and Economic Evidence (note that changes in remuneration were announced November 2018 but are not yet publicly available)

For the purposes of this study, these services listed in the chart have been classified as those that are outside of the usual scope of pharmacist services and thereby considered ESoP activities.

Collaborative Practice Agreements (CPA)

Another avenue available for pharmacists to practice beyond their traditional scope is via a Collaborative Practice Agreement (CPA). The American College of Clinical Pharmacy (ACCP, 2015) defined Collaborative Practice Agreements (CPA) as a " formal practice relationship between pharmacists and other health care practitioners, whereby the pharmacist assumes responsibility for a specific patient care function that are otherwise beyond their typical scope of practice but aligned with their education and training" (p.2). This could include initiation and modification of drug therapy **(**ACCP, 2015). The Centre for Disease Control and Prevention (CDC) released a 2013 document in which they defined a CPA as "a formal agreement in which a licensed provider makes a diagnosis, supervises patient care, and refers the patient to a pharmacist under a protocol that allows the pharmacist to perform specific patient care functions (p.1). The Saskatchewan College of Pharmacy Professionals (SCPP) allows pharmacists to prescribe schedule 1 medications, excluding narcotic and controlled substances, and order and interpret lab values via a CPA. They created a document *Framework for Developing a Safe and Functional Collaborative Practice Agreement* on their website (SCPP, 2017 n.d.). The document outlines the steps required for the creation of a CPA along with education and emphasis on good

interdisciplinary collaboration. CPAs appear to be a widely accepted concept in pharmacy settings, and are often portrayed as the gold standard, yet there seems to be limited literature about where CPAs fit within pharmacist collaboration.

Expectations of Collaboration

The amendments to The Pharmacy Act recognize the ability of pharmacists to improve health care delivery in the province, working collaboratively with doctors and other health professionals. Health Minister Dustin Duncan stated at the time that, "All health care providers, including pharmacists play an increasingly important role by working to their full scopes of practice on a collaborative team (Government of Saskatchewan, 2014, para. 3). Furthermore, the regulatory body, Saskatchewan College of Pharmacy Professionals (SCPP) registrar Ray Joubert emphasized at the time that they would take steps to work collaboratively with the various stakeholders to ensure appropriate standards and training are in place so that services are delivered safely and are properly co-ordinated within the health system (Government of Saskatchewan, 2014). Many of the new ESoP services have resources built into the process to encourage collaboration, such as a form sent to physicians after prescribing a medication for a minor ailment. Exploring if and how these services have influenced collaboration with physicians in practice, compared to traditional duties is interesting. Health Minister Duncan, SCPP and PAS, all claimed that Saskatchewan residents should benefit from pharmacists' expansion in scope of practice by providing greater and more timely access to health services (Government of Saskatchewan, 2014). To assess pharmacist and physician collaboration, we must first have a clear description of the terminology in the literature.

Defining Collaboration

There is variance in the literature of what it means to practice interprofessionally. Having a clear understanding of what it means is vital in the evaluation of collaboration in community pharmacy. Confusion about what it means to be part of primary healthcare teams, multidisciplinary teams, or interdisciplinary teams could result in a false narrative of community pharmacists' actual degree and nature of collaboration. Some pharmacists may not consider themselves as part of a multidisplinary team or a primary health team, even though they may be actively involved in collaborative actions that are improving the health and wellbeing of patients; possibly this perspective could be because of environmental determinants such as the physical separation of the community pharmacy from other healthcare providers. For example, if collaboration is viewed as a community pharmacist sitting at a round table with other healthcare professionals discussing therapeutic options for a patient then there is the potential to largely under represent the various types of collaboration that are taking place, particularly in community pharmacy, in which it would be rare for such an activity to occur.

The organized structure of institutional facilities like hospitals or structures within the health regions facilitates communication and collaboration between health care professionals; however, collaborative practice in the community is more challenging (Kelly et al., 2013). Oandasan et al. (2006) argued that "collaboration is a process that requires relationships and interactions between health care professionals regardless of whether or not they perceive themselves as part of a team" (p.16). The preferred term used when examining integration of services is collaboration (Bradley, Darren & Peter, 2012). Loxley, as cited in Bradley et al. (2012), agreed that 'collaboration' is an appropriate description in the context of health and working together since it acknowledges the interwoven conflict between professionals. For the purposes of this study, the term 'collaboration' was used when assessing community

pharmacists' interactions with healthcare professionals, rather than teams, team work, primary health teams, interprofessional or multidisciplinary teams.

The term collaboration has varying definitions in the literature. Makowsky et al. (2006) defined collaboration as a "joint communicating and decision-making process with the goal of satisfying the patients' wellness and illness while respecting the unique abilities of each professional" (p. 169). Unlike many of the very descriptive terms defining collaboration, Oandasan et al. (2006) portrayed collaboration in a broader sense; they described it as collective action toward a goal. They acknowledged that collaboration is a process that requires relationships and interactions between healthcare professionals. As a result, ultimately the health care professionals themselves determine when collaboration has occurred. Oandasan et al. (2006) viewed collaboration as a spectrum, involving a wide range of collaboration, depending on the type of care required. This view of collaboration seems less restrictive and more consistent with the collaborative practices experienced in community pharmacy.

If the ultimate goal of interprofessional collaboration is, care that leads to improved quality, access, continuity of care, and more appropriate utilization of resources, then it is important to broaden the scope of what it means to practice collaboratively (Oandasan et al., 2006). This understanding is particularly relevant when analysing interprofessional collaboration through the lens of community pharmacists. Community pharmacists are often not viewed as a core part of primary healthcare teams since they are perceived as a retailer, and reimbursement was historically for the sale of a good or physical product rather than services (Rigby, 2010). Add to that the geographical isolation and separate premises (Rigby, 2010), it seems unrealistic to apply the same standards in evaluating interprofessional collaboration in community pharmacy exclusively through the lens of primary health teams. Kelly et al. (2013) conducted a

study evaluating pharmacists' and physicians' views on collaborative practice. They stated they could not identify a standard definition in the literature for collaboration that was applicable to the subject matter. Therefore, they choose to define collaborative practice as "Family doctors and community pharmacists sharing information and working together to improve health care delivery for a specific patient" (Kelly et al., 2013, p. 219). This definition is more closely aligned with collaboration occurring in community pharmacy practice, since the main recipient of interprofessional collaboration tends to be family physicians, who are main prescribers of medications in community pharmacy settings.

Benefits of Collaboration

The Canadian Academy of Health Sciences (CAHS) released a report on optimizing scopes of practice (as cited by CPhA, 2016b). The report suggested that a prime way to expand and integrate advanced scope and services into practice is through collaborative care models (CPhA, 2016b). Interprofessional collaboration has played an important role in improving healthcare services and patient outcomes (Reeves et al., 2011). As a result, interprofessional collaboration has become a high priority for healthcare and health education decision-makers internationally (Reeves et al., 2011). In particular, pharmacist-physician collaboration can help improve medication safety and resolve medication therapy problems (Liu & Doucette, 2011). Having a better understanding of how to foster such collaboration can assist in the implementation of medication therapy management (MTM) services (Liu & Doucette, 2011). However, Reeves et al. (2011) noted that despite a growth of research in this area, there remains poor conceptualization of these related interprofessional activities.

Oandasan et al. (2006) acknowledged that collaboration has the potential to improve patientcare, enhance patient safety, and lower workload among healthcare professionals. Bryant,

Coster, and McCormick (2010) indicated that both community pharmacists and physicians believed improvements in collaboration could result in greater satisfaction and professional development, while making the healthcare system easier to use. Additionally, cooperation could improve system efficiency, quality of interactions and better address patients' needs. However, "despite a common interest in optimizing the benefits and minimizing the risk of medication to patients, community pharmacists and GPs have tended to work in isolation from one another with only minimal contact on routine matters" (Bradley et al., 2012, p. 37). Dobson et al. (2006) noted that the need for collaboration is widely acknowledged and team-based models are not a new concept. They also indicated that despite attempts to encourage these models, pharmacists and other health care professionals continue to work alone with limited opportunities to share their skills and expertise. Doucette et al. (2005) noted that although such collaboration between pharmacists and physicians is desired, there has been limited study with regard to the influences on collaboration and to the factors that support the development of such collaborative relationships, particularly from the pharmacists' perspective.

Canadian health reform is driving the health care system toward greater use of community-based models of care and with it, increased expectation of community pharmacists to work in a more coordinated manner with other health care disciplines (Fyke, 2001; Romanow, 2002). Goldman, Meuser, Rogers, Lawrie, and Reeves (2010) stated that this last decade was particularly important for health reform in Canada since there were reports documenting the challenges of fragmented health care, and the conception of policies and allocation of resources for the implementation of interprofessional team-based care. Pharmacy and physician organizations are encouraging the pursuit of strategies for more collaborative practice between pharmacists and physicians as a means of improving medication management (Doucette et al., 2005). General practitioners and community pharmacists are increasingly being encouraged to

adopt more collaborative approaches to health care delivery since it is an effective way to achieve therapeutic goals and enhance medication management, thereby improving patient care (Van, Costa, Abbott, Mitchell & Krass, 2012). Furthermore, Doucette et al. (2005) noted:

> In practice settings where pharmacists have been integrated successfully into drug therapy management processes, patient outcomes have improved. Several studies have evaluated pharmacist-physician team management of drug therapy and have reported improvements in blood pressure, diabetes outcomes, cholesterol levels, and depression. (p. 566)

There are several studies that have shown that pharmacist-provided medication reconciliation can help reduce medical discrepancies and help move care forward. In Ontario the introduction of family health teams (FHT) is an approach aimed at bringing different healthcare providers together, many of which have funds specifically for pharmacists (Goldman et al., 2010). Saskatchewan and Alberta follow a similar model in their primary healthcare teams (CPhA, 2016b).

A Cochrane review from Pande, Hiller, Nkansah, and Bero (2013) which analysed the effect of outpatient pharmacists on patient outcomes and prescribing patterns showed the pharmacists were particularly effective in reducing systolic blood pressure, blood glucose and managing asthma. Loffler et al. (2017) also acknowledged that "numerous studies from various settings provide evidence for the positive effect of community pharmacists on medication management, patient counselling, health education, and improved care resulting in better clinical outcomes" (p.2). Burton, Duffus and Williams (1995) acknowledged that community pharmacists are beginning to respond to the challenge and there is an uptake in some team-based

models of care; however, relatively little is known about interprofessional collaboration as a routine part of pharmacy practice.

Barriers to Collaboration

There are numerous barriers identified in the literature that can impede a pharmacist's ability to collaborate successfully with other healthcare professionals. Belanger and Rodriguez (2008) identified several barriers in their exploration of multi-disciplinary healthcare teams: 1) unclear role identification; 2) reimbursement structures/mechanisms; 3) regulatory constraints; 4) lack of interprofessional training, possibly due to faculties, power differentials, different approaches to patient care; 5) lack of communication, trust and respect, and shared goals among health professionals; and 6) lack of supportive clinical and administrative systems.

Kelly et al. (2013) examined pharmacists' and physicians' views on collaborative practice. They acknowledged pharmacists working in silos might have added challenges. They referenced two Canadian studies that have investigated the collaborative relationship specifically between community pharmacists and physicians in the provision of patient care. In the Ontario study, opinions differed regarding appropriate pharmacists' roles (Kelly et al., 2013). Both community pharmacists and physicians identified the necessity for clarifying professional roles, for identifying effective strategies for enhanced communication and determining compensation mechanisms to encourage collaboration. A Saskatchewan study investigating opinions of family physicians around pharmacists' collaboration also determined lack of financial reimbursement, along with time constraints being barriers to collaboration (Kelly et al., 2013). Van, Mitchell and Krass (2011) hypothesised that although there are barriers to collaboration between pharmacists and physicians, the most common are difficulty-integrating pharmacists into primary health teams and lack of interest from physicians. Furthermore, when it comes to the changing role of

the pharmacist, physicians may accommodate some of the changes; however, they may see the expansion of the pharmacist role as a threat to their autonomy and control (Edmunds & Calnan, 2001). This view has the potential to threaten collaboration between community pharmacists and physicians, particularly if pharmacists attribute ultimate authority to physicians (Edmunds & Calnan, 2001).

Attitudes around Collaboration

D'Amour, Ferrada-Videla, Rodriguez, and Beaulieu (2005) postulated that health care professionals are socialized throughout their education to adopt a discipline-based vision of their clientele and the services they offer. Healthcare disciplines often develop strong theoretical and discipline-based frameworks that can rigidly define their professional role and responsibilities (D'Armour et al., 2005). She indicated that the dynamic established between professionals is just as important as the context of the collaboration and that it needs to be understood not only as a professional endeavor, but a human process. Healthcare professionals understanding the benefits of collaboration alone will likely be insufficient since "professionals will not collaborate if the effort is only based on the notion it will be good for the clients" (D'Amour et al., 2005, p. 128). As a result, interprofessional collaboration is a complex phenomenon influenced by a number of variables, including the attitudes around collaboration.

Multiple literature reviews have suggested, "Most community pharmacists are not participating in team-based models of interprofessional practice" (Dobson et al., 2006, p.128) and that pharmacists have the potential to contribute significantly to primary health teams. Gilbert and Ray (as cited in Dobson et al., 2006) warned that "if community pharmacists are unable or unwilling to participate in the emerging team-based models of care their potential is likely to remain unfulfilled, further isolating themselves from the other members of the primary

care team" (Dobson et al., 2006, p.128). The CHSRF policy on teamwork indicates that healthcare professionals have their own understanding of what constitutes teamwork and that no one definition exists. Teamwork is a product of collaboration and collaboration is a process of interactions and relationships between health professionals, regardless of whether or not they perceive themselves as part of a team (CHSRF, 2006). When community pharmacists were questioned regarding their attitudes around collaboration, they largely showed support and willingness to participate collaboratively; furthermore, they demonstrated an understanding of the value of collaboration to improved patient outcomes (Jove et al., 2014). Kelly et al. (2013) stated that both pharmacists and physicians want more collaboration opportunities and agree that collaborative practice can positively affect patient outcomes. This entire notion seems paradoxical in nature and suggests that there could be much to unearth by re-examining collaboration in the context of a community pharmacy setting. Since collaboration is defined by the relationships and interactions that occur between co-workers, then it is ultimately the health professionals themselves who determine whether collaboration occurs (Oandasan et al., 2006, p.4); querying practicing community pharmacists may be the best source to glean light on the subject matter.

Factors that community pharmacists have given as barriers to collaboration include mainly lack of time and inadequate remuneration (Kelly et al., 2013). Until recently pharmacist services reimbursed by public payers were primarily those associated with dispensing prescriptions. Pharmacists' desire to apply their knowledge and skills to enhance patient care is hampered in an environment in which remuneration is tied to the dispensing of a product, rather than services rendered. "A recent analysis of remuneration models for pharmacy professional services indicates that the method of remuneration does appear to influence the provision of services, noting that in countries where pharmacists are paid a flat fee to cover all services, there

is a lack of incentive to provide more or higher quality service" (Kelly et al., 2013, p.219). Legislative changes expanding the scope of practice of pharmacists by the SCPP and the Ministry of Health, have often been coupled with associated funding of these new services (Pharmacy Association of Saskatchewan, 2018). If remuneration does influence the provision of services, then that sentiment should be reflected in the professional practice of Saskatchewan community pharmacists.

Categorizing Interprofessional Activities

Reeves et al. (2011) stated that despite the increased awareness that interprofessional collaboration can improve the quality of health care, services, and patient outcomes, there is still poor conceptualization of what constitutes interprofessional activities. As a result, they attempted to gain a better theoretical and empirically tested understanding of interprofessional collaboration and education by analysing literature in the field (Reeves et al, 2011). One pivotal finding was the necessity to understand what constitutes an interprofessional intervention. Reeves et al. (2011) categorized the various interprofessional interventions into three groups: 1) interprofessional education (IPE) interventions, which occur when two or more professions learn interactively to improve collaboration and the quality of care; 2) interprofessional practice (IPP) interventions, which are activities or procedures incorporated into regular practice to improve collaboration and the quality of care; and 3) interprofessional organizational (IPO) interventions, which are changes at the organizational level (e.g. space, staffing, policy) to enhance collaboration and the quality of care (p. 169). Reeves et al. (2011) indicated that differentiating amongst types of interventions could help with better understanding their processes and effects. Categorization could help us move beyond the terminological quagmire, by helping to differentiate between the types of interventions, and delineating distinctions among intervention outcomes (Reeves et al., 2011).

In the context of community pharmacy, there is a range of interactions considered collaborative. Interactions may range from simple clarifications, sharing of information for seamless care, to discussions of the best therapy options or the formation of partnerships in the delivery of clinical services. Loffler et al. (2017) noted that interprofessional collaboration did not develop with community pharmacists to the same extent as with other health professionals and that overall general practitioner to pharmacist interactions are of low frequency. With the onset of the ESoP, it would be interesting to assess if these collaborative interactions have increased in frequency or changed in their nature. However, to assess collaboration, we need to have a deeper understanding of what collaboration is. Axelsson and Axelson (2006) postulated that there have been several conceptual models developed to assist in the understanding of characteristics and stages of collaboration. However, Bradley et al. (2012) noted that little consideration has been given to how they relate to collaboration between community pharmacists and physicians.

Theoretical Models of Collaboration

There is a growing trend for healthcare professionals from all disciplines to work together in a collaborative fashion to provide patient services (Rathbone, Mansoor, Krass, Hamrosi, and Aslani, 2016). Consequently, there are various conceptual models developed for examining interprofessional collaboration. The following section examines several models that are either directly or indirectly related to understanding collaboration between pharmacists and physicians in the community pharmacy setting.

Armitage's taxonomy of collaboration

Bradley et al. (2012) stated the push for integrative systems and collaboration across organizations and professions of health has led to the development of scales and models to

conceptualize collaborative behaviour; however, they indicated there are limited models available that reflect that of the dynamics of community pharmacists and physicians. One such model created is known as Artimage's taxonomy of collaboration as seen below (as cited in Bradley et al., 2012).

1.Isolation	2.Encouter	3.Communication	4.Collaboration	5. Collaboration throughout the organization

Figure 2.1 Armitage's Taxonomy of Collaboration (as cited in Bradley et al., 2012)

Artimage, as cited in Bradley et al. (2012), formulated a five-stage taxonomy of collaboration in primary care. The first, *isolation*, refers to members who do not meet, talk or write each other. Next is *encounter*, in which members correspond but the nature of the interaction is not meaningful. The third stage in Artimage's taxonomy is *communication* which denotes encounters, correspondence and the transfer of information. Next is *collaboration between two agents* which refers to "members who act on the information sympathetically: participate in patterns of joint working: subscribe to the same general objective as others on a one-to-one basis in the same organization" (Bradley et al., 2012, p. 38). The last stage is *collaboration throughout the organization* in which the work of all members is fully integrated. Breaking down interprofessional collaboration into more specific levels of interaction may be a more effective way of understanding the type of collaboration, particularly in the context of a community pharmacy setting.

Hudson's Model

Hudson's model has been a suggested model for attempting to understand interprofessional collaboration, particularly in the context of interprofessional relationships. Hudson, Hardy, Henwood, and Wistow (1997) created a four-step model of characteristics of collaboration known as the primary health care-social care collaborative continuum.

Table 2.3 *Characteristics of Collaboration* (Hudson et al., 1997)

Hudson's Characteristics of Collaboration
Isolation/Encounter Absence of joint activity with no communication at all between agencies. Some ad hoc inter-agency contact, but lowly connected networks, divergent organizational goals and perceived rivalry and stereotyping.
Communication Joint working, but work completed is marginal to the main organizational goals. Frequent interactions and sharing of information as it applies to users whose needs cross boundaries, some joint training, a nominated person is responsible for liaison, expectation of reciprocation.
Collaboration Joint working is central to mainstream activities. Trust and respect in partners means that they are willing to participate in formal, structured joint working including joint assessments, planning, service delivery and commissioning. There is a highly connected network and low expectation of reciprocation.
Integration No longer see their separate identity as significant. May be willing to consider creation of unitary organization.

The four steps include isolation/encounter, communication, collaboration, and integration. The last step focuses on integration rather than collaboration. Bradley et al. (2012) acknowledged that integration is a term often used by policy makers and that the concept has its roots in organizational theory. Lawrence and Lorsch's (1967) work concentrated on the differences between integration and differentiation in organizational systems. They defined an organization as:

> a system of interrelated behaviors of people who are performing a task that has been differentiated into several distinct subsystems, each subsystem performing a section of the task, and the efforts of each being integrated to achieve effective performance of the system (Lawrence & Lorsch, 1967, para. 3).

If we view community pharmacy practice as an organization, then we may be able to understand its components with greater clarity. Lawrence and Losch (1967) described two important definitions in our understanding of organizational systems. The first is differentiation, which they define as "the state of segmentation of the organizational systems into subsystems, each of which tends to develop particular attributes in relation to the requirements posed by its relevant external environment" (Lawrence & Losch, 1967, para. 4). Integration is defined as "the process of achieving unity of effort among the various subsystems in the accomplishment of the organization's task" (Lawrence & Losch, 1967, para. 5). Understanding these definitions can help assist in categorizing pharmacist collaboration by applying these concepts to the types of exchanges occurring in the community pharmacy environment.

Lawrence and Lorsch's (1967) contingency theory explained that organizations often become separated into sub-units to best deal with their external environment. They established that there is an inverse relationship between differentiation and integration. The more sub-units

became specialized with specific tasks geared toward meeting the specific needs of the environment, the more differentiation there was, and the less integrated they became. Lawrence and Lorsch (1967) ultimately concluded that highly differentiated systems had more difficulty with integration. This separation could be problematic in achieving overall organizational goals or over arching objectives, since success tended to favour organizations that were highly differentiated and highly integrated.

If we apply this theory to the constructs of the pharmacy and physician relationship, some important parallels can be drawn. Liaw and Peterson (2009) noted that the relationship between the pharmacist and physician dates back to the apothecary, in which physicians and pharmacists had a more integrated working relationship. However, in 19th century England, dispensing and prescribing became separated. This separation of duties has since continued to divide, resulting in two specialized professions, with a high-level of differentiation (Liaw & Peterson, 2009). Each has become more specialized due to factors such as introduction of regulatory frameworks, introduction of a universal health care system, and emphasis on cost and safety to name a few (Liaw & Peterson, 2009). Liaw and Peterson (2009) acknowledged the importance of improved safety, effectiveness and improved patient outcomes and highlighted that ongoing training and professional development, within and across professional boundaries is essential to support harmonious and cost-effective interprofessional practice. Separation does not assure system efficiencies nor effective utilizations of medicine (Liaw & Peterson, 2009). Lawrence and Lorsch (1967) contended that differentiation played a role in each profession meeting their requirements with a certain degree of proficiency. However, unfortunately it has also decreased the level of integration between the two and unfortunately created a somewhat adversarial relationship (Liaw & Peterson, 2009).

The most effective organizations are ones that have both high levels of differentiation and integration; therefore, it is incumbent that we examine strategies to assess and improve the levels of integration (Lawrence & Lorsch, 1967). Liaw and Peterson (2009) discussed the importance of an integrated interprofessional and patient centered approach. He surmised that the "approach must be 'apothecarial' complementary roles and responsibilities for the prescriber and dispenser within the patient-clinician therapeutic relationship, and not adversarial" (Liaw & Peterson, 2009, p.276). They suggested that close collaboration and communication is particularly important in areas of pharmacists' expanded practice, such as pharmacist prescribing. The recent changes to the profession of pharmacy with expanded scope of practice and advanced practice activities may provide a segue to and a tremendous opportunity for improved integration and collaboration. These changes could create a return to more similarities in the activities of each profession, thereby making them less differentiated. However, there is still confusion about what constitutes interprofessional practice and ways to enhance communication and collaboration between pharmacists and physicians (Liaw & Peterson, 2009).

Spectrum of Collaboration

Oandasan et al. (2006) created a model that depicts collaboration as a spectrum. The report claims that collaboration between healthcare professionals is dynamic and can encompass a wide range of collaborations depending on the type of care required. As seen in the figure below, the model starts with independent parallel practice in which autonomous health professionals are working side by side. It then progresses to more consultation and referrals in which professionals exchange information. Lastly the spectrum proceeds to interdependent co-provision of care with interdependent decision-making.

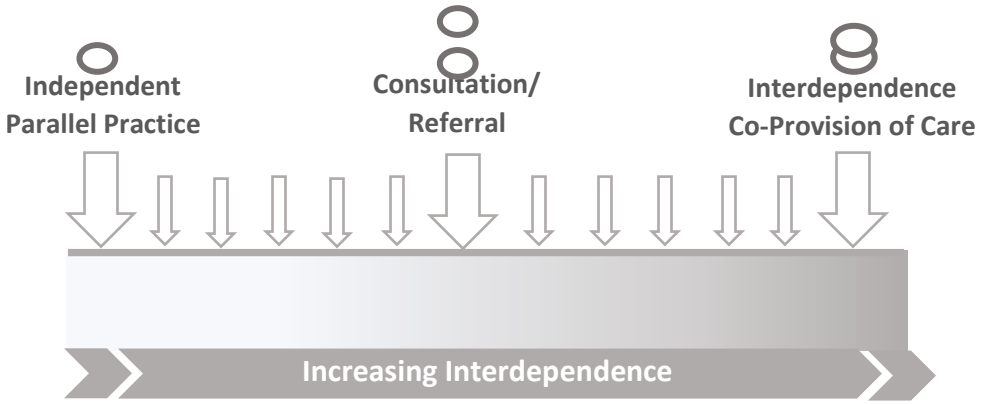


Figure 2.2 Spectrum of Collaboration (Oandasan et al., 2006)

As the model progresses from left to right, there is an increasing level of interdependence required. "Health professionals who practice using a process of interprofessional communication and decision-making that promotes collaboration based on shared knowledge and a range of professional skills to influence patient care are engaged in collaborative practice" (Oandasan et al., 2006, p.5). The report also stated that interprofessional collaboration varies depending on the complexity of healthcare needs.

Collaborative Working Relationship (CWR) Model

Doucette et al., (2005) created a conceptual model to describe pharmacist physician collaboration which was synthesized from models of business relationships, interpersonal relationships and collaborative care, known as Collaborative Working Relationships (CWR) model. This model suggested that professional relationships between pharmacists can progress through several stages: stage 0 connotes professional awareness, stage 1 includes professional recognition, stage 2 involves exploration and trial, stage 3 is associated with professional relationship expansion, and finally stage 4 is commitment to collaborative working relationship (McDonough, & Doucette, 2001, p. 683). There is literally no interaction between the physician and pharmacist at stage 0. However, by stage 1 exchanges are beginning to be initiated by the

pharmacist. As the relationship develops, the level of interdependence increases, and communication becomes bilateral in nature. Stage 4 marks the point where mutual trust and respect have been established, with both parties working to maintain the relationship.

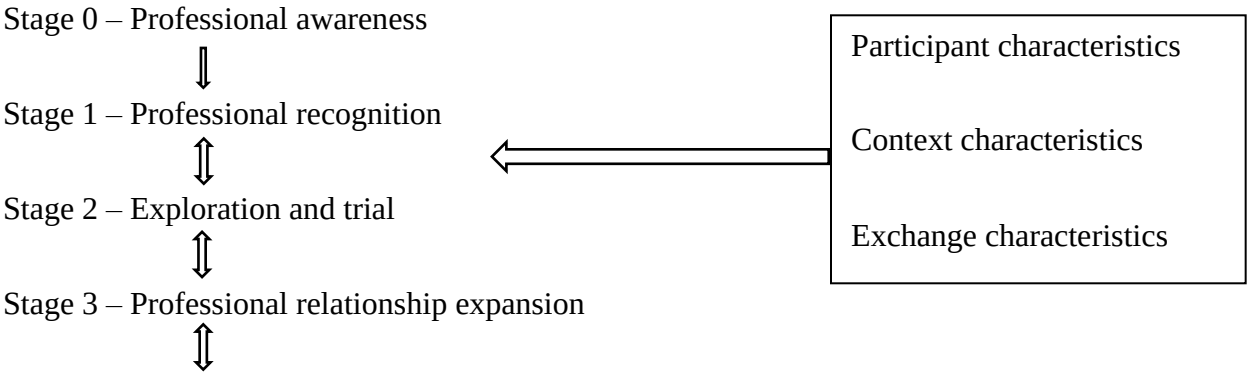


Figure 2.3 The Collaborative Working Relationship (CWR) model (as cited by Bradley et al., 2012, p.39)

McDonough and Doucette (2001) specified that interactions between physicians and pharmacists are viewed as exchanges. At stage 0, exchange is minimal and considered discrete. An example would include making a refill request. Interactions are short in duration, with limited effort spent in developing the relationship or improving the patient care process. At stage 1, efforts to forge the relationship are primarily unilateral and initiated by the pharmacist. The pharmacist is cognizant of the value of fostering the relationship for the benefits of supporting their practice and clinical services provided. At this point the physician may not see the value of the service or the value in establishing a relationship with the physician. Progression toward stage 4 indicates increasing collaboration among the pharmacist and physician and greater motivation to maintain the relationship. McDonough and Doucette (2001) identified three main variables that influence the progression of the pharmacist and physician collaborative relationship among the stages; 'individual characteristics', 'context characteristics' and 'exchange characteristics' (p. 684).

Individual Characteristics

Individual characteristics refer to characteristics of the participants such as demographics, age, and degree of education. McDonough and Doucette (2001) hypothesised that younger pharmacists whose pharmacy training included more interprofessional training may be more receptive to collaboration with a physician. Additionally, knowledge as to the benefits of collaboration, attitudes around collaboration and confidence level could influence the level of engagement in pharmacist-physician collaboration. Previous history of collaboration, professional skills, and abilities may also be valuable characteristics supporting increased relations (McDonough & Doucette, 2001).

Context Characteristics

Context characteristics are an additional variable that can influence the growth of pharmacist-physician collaboration. Context characteristics refer to the settings and practices in which the pharmacists and physicians interact (McDonough & Doucette, 2001). This category refers to professional practices including patient care activities, resources present, patient mix and organizational structure. Practitioners consider these factors relevant when determining the costs and benefits of forming a CWR (McDonough & Doucette, 2001). Practice features include patient mix and practice type. McDonough and Doucette (2001) suggested that if pharmacists and physicians share the same patient pool and work in single provider practices, such as in a rural setting, there may be more shared incentive to collaborate and the collaboration may be less formal, structured and open, verses that of an urban group practice setting with a varied patient population.

Additional context characteristics include proximity, volume of interaction and system relationships. McDonough and Doucette (2001) indicated that the closer the proximity of the

pharmacist and physician practices, the more opportunity exists for collaboration. The volume of the interaction between pharmacist and physician is also significant, since increased interaction could improve professional relationships and with it, enhanced collaboration. Lastly, being part of the same healthcare system or administrative system will likely result in more integration and collaboration (McDonough & Doucette, 2001).

Exchange Characteristics

The last set of characteristics that influences the development of the CWR is exchange characteristics. This category refers to physicians and pharmacists exchanging permission, information and responsibility for patient care (McDonough & Doucette, 2001). Interactions can range from discrete to relational. Discrete interactions are impersonal in nature and characterised as separate, unrelated interactions with little effort afforded for relationship development. In contrast, relational exchanges focus on the relationship in which both participants perceive the relationship as beneficial long term rather than on a transaction-by-transaction basis. “Exchange characteristics include attraction, communication, power and justice, norm development, expectation assessment, performance assessment and conflict resolution” (McDonough & Doucette, 2001, p. 685). Through my experience, exchanges at the community pharmacy level, may occur through a variety of mediums, including in-person, phone, fax, digital messages, or written communication.

Conceptual Model of Collaboration

Examining collaboration in the context of community pharmacy rather than making direct comparisons with collaboration that occurs in primary healthcare teams may provide additional information and another perspective on which to investigate the topic. Community pharmacists generally work outside of the formal health care system, often within the private

sector, with a different set of demands, reimbursement structure, and often in a physical location away from the physician or healthcare team. Therefore it is possible that traditional models of collaboration derived from literature on teamwork including those with pharmacists on primary healthcare teams or in a hospital setting, may not be the best lens from which to examine collaboration in the community pharmacy setting. Creating a model that applies the theories and concepts related to collaboration and adapts it to the context of the community pharmacy setting may add to our understanding in this area.

Community Pharmacists' Collaboration Model (CPCM)

The theoretical model of pharmacist collaboration that I developed to help frame my research is called the Community Pharmacists' Collaboration Model (CPCM). It contains elements derived from Artimage's theory of collaboration (as cited in Bradley et al., 2012), Hudson's model (1997), Oandasan et al. (2006) Spectrum of Collaboration, and the CWR model (McDonough & Doucette, 2001). I took principles of each and applied to my own knowledge base in community pharmacy practice and of organizational systems from education administration to form a model on collaboration to apply to my research in community pharmacy. *Figure 2.4* provides a depiction of the CPCM and various levels of collaboration.

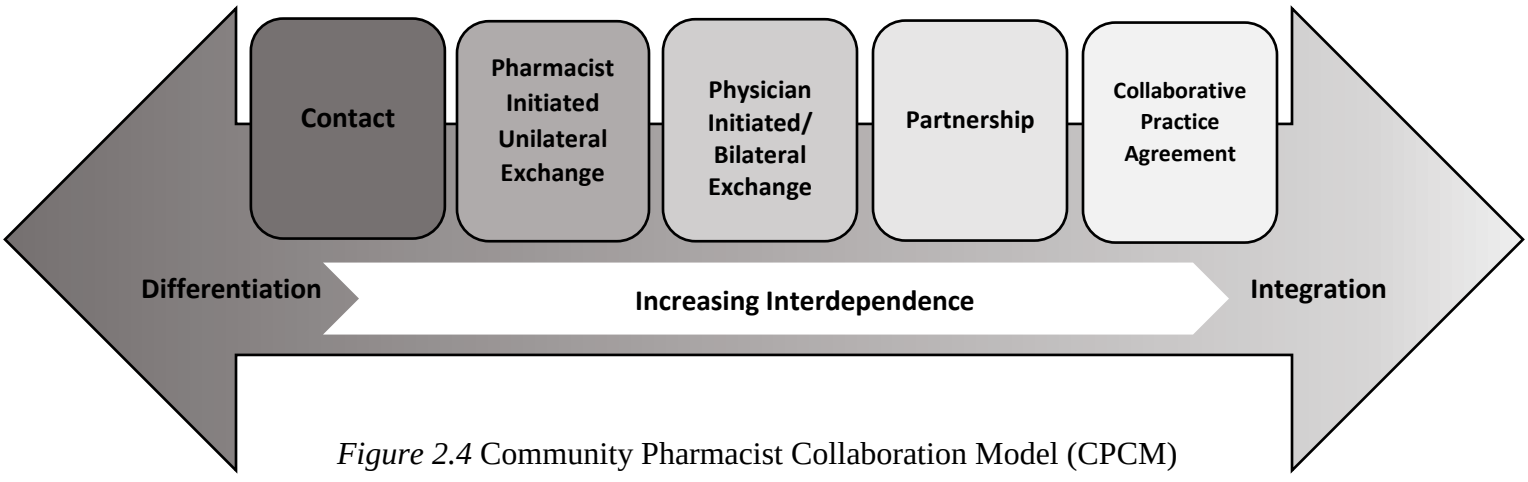


Figure 2.4 Community Pharmacist Collaboration Model (CPCM)

This perspective on collaboration in community pharmacy is that collaboration is not one single entity or stage that is reached, but rather a spectrum that varies depending on the exchanges and agreements made, some being more differentiated in nature and some more integrative. Collaboration in its most simplistic form begins at the point of contact. Contact starts with collaboration that involves a mutual awareness by both pharmacist and physician of each of their roles and professional duties and responsibilities. Exchanges carried out are more differentiated based on the traditional pharmacist and physician roles and expectations. If pharmacist initiated unilateral exchanges, there is an expansion in collaboration toward integration. If exchanges are physician initiated or bilateral in nature, there is again enhanced collaboration that is less differentiated and more integrated. If exchanges are more developed or formalized, a partnership or Collaborative Practice Agreement (CPA) may occur. The increase in exchanges toward integration could provide sharing of mutually beneficial goals, information, coordination of services, and shared decision making between physician and pharmacist. Furthermore, it implies there is a clear understanding of the roles and capabilities of each professional and mutual trust and respect indicative of good interprofessional collaborative practices. The model depicts that exchanges progressing toward integration require an increasing level of interdependence between pharmacists and physicians.

Community Pharmacist Model of Collaboration Components

Collaborative interactions can have several different forms that range along a spectrum, from simple contacts to detailed and more formalized agreements. The following section describes the types of collaborative interactions.

Contact

Artimage and Hudson categorized the first stages of collaboration as Isolation/Encounter. Hudson et al. (1997) described this stage as the absence of joint activity with no communication at all between agencies. I choose not to use the term 'Isolation/Encounter' but rather to use 'Contact' as the first step in the CPCM. My rationale is that I do not feel the term 'Isolation/Encounter' clearly applies to the community pharmacy setting. In my experience there is no complete lack of joint activity and communication between pharmacists and physicians once a prescription is received or 'Contact' is made. Pharmacists and physicians are working on the same goal of having the positive treatment outcomes for their patient through the safe and effective use of medication. Communication of this is done via a prescription for the product along with any special instructions or notations. This can occur with a direct verbal order from the physician or indirectly with a written or digital order. Contact is the starting point for all collaboration and implies that the physician has an awareness of the role of the pharmacist, their skills set, and certain expectations about what service the pharmacist will provide. Contact relies on adherence to and understanding of each of the typical roles and responsibilities of the physician and pharmacist. Pharmacists and physicians have already began the process of collaborating at the point of Contact; however, roles are highly differentiated with the physician being responsible for assessing, diagnosing, and prescribing for the patient's condition and the pharmacist accurately interpreting these orders and ensuring the safe acquisition of the medication to the patient. Expectations of each party are based on the typical and traditional roles of both professionals, rather than the individualization or close alignment of specific needs, goals, and integration of tasks.

Pharmacist Initiated Unilateral Exchange

Pharmacist initiated unilateral exchange refers to a transference of information from the pharmacist to the physician. This exchange may involve the pharmacist sharing information about a patient, which will prevent harm, improve adherence, improve patient outcomes, or provide detail about a patient's health and medication that will add to the physician's knowledge of the patient health and medication status. Collaboration in this area may involve a larger utilization of pharmacist's knowledge and skills. Information shared with the physician could provide the potential to influence decisions made in managing the patient's health and wellness. Patients may directly or indirectly benefit from the pharmacists' initiated unilateral exchange. Exchanges are more singular in nature, pertaining to one patient or case and there is minimal interaction from the physician and, therefore, a limited understanding of physicians' concerns regarding the patient's health and medication concerns.

Physician Initiated/Bilateral Exchange

Physician initiated bilateral exchanges refers to the physician instigating an exchange such as, requesting information, asking questions, or for completion of a specific task or service. Exchanges themselves are more bilateral in nature or have patterns of joint working in which information is shared back and forth between the physician and the pharmacist. Information is acted on sympathetically by both physician and pharmacist. Exchanges of this nature may imply an expanded level of trust and awareness of the pharmacist's knowledge and skill set. Additionally, they may have enhanced opportunity for shared decision making and a greater degree of receptiveness by the physician to implement a pharmacist's recommendations. The physician engaged in this type of exchange could provide the pharmacist with a greater opportunity to better understanding their priorities, needs, and concerns. This enhanced level of

exchange provides less differentiation of professional roles and lends itself to improved integration between pharmacists and physicians.

Partnership

Partnership in the Community Pharmacists Collaborative Model (CPCM) refers to a verbal or informal agreement between the pharmacist or pharmacy and the physician or physician group for a specific task or service. The service would be related to more than one patient and occur in an on-going fashion. This type of collaboration has both pharmacist and physician working together on a mutually beneficial and shared goal. Agreeing to work together on a shared goal, in a coordinated fashion provides a collaborative relationship that is more integrated in nature.

Collaborative Practice Agreement (CPA)

In a collaborative practice agreement (CPA) or other written agreement the collaborative relationship is formalized in writing. As such, there is likely specific information about the role of the pharmacist and physician, including expectations and possibly outcomes. The written agreement assures a level of commitment on both sides and potentially ensures legal accountability. A written agreement assumes shared responsibility and mutually beneficial goals that are incorporated into the structure and processes of the organization, in this case the physicians' and pharmacists' community practice. In these ways, a CPA or other written agreement is the ultimate in integration between pharmacists and physicians.

Comparative Theories of Collaboration

Hudson's model of collaboration and the CWR model portrays collaboration in a step wise fashion. The premise is that one must progress through the stages of collaboration to reach

or achieve true collaboration, with the ultimate goal being integration or collaboration within the organization. The CWR model goes as far as presenting a guide of determinants that help lead to more advanced stages of collaboration. Although it may be possible for collaboration to start from contact and progress from pharmacist initiated and physician-initiated exchanges, to partnership and ultimately integration, it may not be a requirement. A pharmacist and physician can collaborate at any of the five listed types of collaboration independently depending on the situation. For example, a pharmacist may approach a physician with an idea of partnering in an initiative to provide influenza immunizations to high risk patients in the upcoming flu season. The collaboration started at a partnership level and did not have preceding traditional exchanges or physician-initiated exchanges. The CPCM reflects this independence of the types of collaboration by not having arrows connecting the types of collaboration or identifying them in the term of stages.

Artimage's taxonomy of collaboration and Hudson's model presents collaboration as a process starting with isolation and encounter, communication and progressing to collaboration within the organization. When applied to community pharmacy, I identify with collaboration starting with an encounter; however, I do not see communication and collaboration as separate steps in the process. Communication and collaboration in community pharmacy occurs at every level. At the early stages of an encounter information is communicated via a prescription and through the patient. There is an expectation of what the pharmacist will do to fulfill the work the physician is requiring, that being to accurately interpret the medication and dose in relation to the condition being treated, screen for drug interactions or allergies, clearly communicate information about the medication and condition and instructions to the patient and assist in insurance coverage. If there is an error, allergy, interaction or other issue the physician expects to be contacted by the pharmacist to resolve the issue. The physician has the defined role of

assessing, diagnosing, and prescribing for the patient and the pharmacist's role includes completing the safe delivery and utilization of that medication. Communication and collaboration occur at the very first contact or encounter, and throughout the process. Therefore, when describing interactions between pharmacists and physicians in the community pharmacy setting, rather than using the terms communication and collaboration, terminology borrowed from the CWR model as exchanges seems more suitable.

McDonough and Doucette (2001) identified variables that influence the progression of the pharmacist and physician collaborative relationship among the stages; individual characteristics, context characteristics and exchange characteristics. Progression toward stage 4 indicates increasing collaboration among the pharmacist and physician and greater motivation to maintain the relationship. The variable that I choose to highlight in the progression of the pharmacist and physician collaborative relationship in the CPCM was exchange characteristics. As mentioned earlier, exchange characteristics refer to physicians and pharmacists exchanging permission, information and responsibility for patient care (McDonough & Doucette, 2001). I choose to use the term 'exchanges' in the development of the CPCM because I felt it provided a more comprehensive and representative description of the types of interactions occurring between community pharmacists and physicians in community pharmacy practice. Furthermore, focusing on exchanges, rather than on all three variables, simplified the process and made it more applicable for the measurement of collaboration in community pharmacy settings. To provide more specificity within the CPCM, exchanges were separated into pharmacist-initiated, physician initiated, and bilateral.

Doucette et al. (2005) applied the CWR model to better understand factors affecting care between physicians and pharmacists. They stated that the CWR model largely explained

collaboration between the two groups. They noted that at low levels of collaboration, the pharmacist initiated most or all communication with physicians. Communication that was more bidirectional was more supportive of collaboration and of effective multidisciplinary teams. Doucette et al., (2005) further suggested that practitioners could become more dependent on each other to manage the medication therapy, and thereby interact in more diverse ways and in greater frequency (Doucette et al., 2005). As a result, the CPCM depicts this type of collaboration closer to integration and further from differentiation.

Differentiation and Integration

The arrow on the CPCM model provides a reflection on where collaboration occurs in relation to exchanges that are differentiated versus those more integrated. Hudson et al. (1997) acknowledged integration as part of the process of later stages of collaboration. Lawrence and Lorsch (1967) discussed differentiation and integration from an organizational theory standpoint, surmising that organizations with high levels of both differentiation and integration are more effective. Considering that both pharmacists and physicians started off as highly integrated and over the centuries have largely become differentiated, the trend back toward the inclusion of collaborative practices integrative in nature would theoretically result in more effective organizations.

Patient outcomes have improved in practice settings where pharmacists were effectively integrated into the medication management process (McDonough & Doucette, 2001). Zillich et al., (2004) noted that "A greater level of professional interaction relates to discussions of drug-related problems, exchanges of patient information, planning of a pharmacist's role, and making referrals. Communications about these topics suggest that the physician and pharmacist have formed collaborative relations." (p.767). Lawrence and Lorsch's (1967) contingency theory

suggested that for organizations to deal with their external environment, there is a need to become segmented into units. However, to accomplish overall goals, these units need to be linked, leading to integration. Collaborative Practice Agreements are one way pharmacists are integrating their services with those of physicians (McDonough & Doucette, 2001). CPAs are important to the successful integration of pharmacists' and physicians' practices Collaboration that is more integrated may provide more opportunity for shared goals, activities and improved efficiencies in the delivery of health care with the potential for improved health outcomes for patients and communities. It will be interesting to see if the recent changes to the profession of pharmacy with expansion of pharmacists' scope of practice provide more opportunity for exchanges that have a higher level of integration.

Summary

The CPCM model provides an opportunity to build upon existing theories of collaboration developed in healthcare. Collaboration models such as Armitage, Hudson's, CSHRF Spectrum of Collaboration, and the CWR model, all address certain aspects of collaboration applicable to community pharmacy. Taking the ideology from these pre-existing models and further developing them to the context of the community pharmacy setting, might assist in exploring pharmacists' collaboration with physicians. Furthermore, understanding how expansion of pharmacists' scope of practice in Saskatchewan over the last ten to twelve years has influenced collaboration, could provide relevant information to be used in conversations surrounding pharmacy practice change and legislation. Improving collaborative practices between health care professionals, like pharmacists, may contribute to the larger systemic and widespread goal of improving access, efficiency in the healthcare system and ultimately improved healthcare outcomes. Chapter Three provides relevant details of how the researcher explores this area and reach stated objectives for the study. Included in the chapter is information

on the methodological approach, study design, participant selection and tools, data analysis and interpretation, trustworthiness of the data, and ethical considerations.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

Research Design

The purpose of this study was to explore community pharmacists' perspectives to determine if recent changes to pharmacists' scope of practice have influenced interprofessional collaboration with physicians, to evaluate Expanded Scope of Practice (ESoP) activities, and gain insight into the most effective forms of collaboration. A quantitative research design was chosen because quantitative research is an approach for testing theories by examining the relationship among variables (Creswell, 2014). This chapter describes the methodological approach, research design, instruments and data collection and analysis.

The worldview or paradigm chosen to guide this study was postpositivism. Postpositivism is the viewpoint that causes most likely determine outcomes; therefore, problems studied need to identify and assess the causes that influence outcomes (Creswell, 2014). "The knowledge that develops through a postpositivist lens is based on careful observation and measurement of the objective reality that exists" (Creswell, 2014. p.7). Research involves collecting information on instruments based on measures completed by participants (Creswell, 2014). Evidence, data and rational consideration help shape knowledge and data are collected to address a research question based on what best suits that question (Creswell, 2014). Further, it is also reductionistic by reducing ideas into a small, discrete set to test hypothesis and research questions (Creswell, 2014). Jackson (1997) compared positivism to Carlo Lastrucci's (1967) definition of science as "an objective, logical, and systematic method of analysis of phenomena, devised to permit the accumulation of reliable knowledge" (p.6). They stated that this objective approach helps minimize bias and grounds its assumptions in fact rather than opinion. Its logical and systematic approach allows for data to be subjected to statistical analysis so that reliable knowledge can be acquired, and predictions made.

The objective of this study was to obtain perspectives from a range of practicing pharmacists in a variety of community pharmacy settings to gain insight as to the general level of engagement in ESoP and its particular influence on collaboration with physicians. Since there appears to be less literature in this particular area, particularly from Saskatchewan pharmacists, I felt it would be more advantageous to acquire a larger quantity of data from as many practicing pharmacists as possible rather than to concentrate on more detailed opinions and experiences from a few. A quantitative study design more readily provides the opportunity to acquire a large amount of data and subject it to statistical analysis and categorization so that stronger conclusions can be drawn. Applying a quantitative approach to the research provides a broader scope of the context of the research compared to that of a qualitative approach (Creswell & Plano Clark, 2011). Although a qualitative approach would have likely provided deeper richer data that uncovered more details and explored the complexity of the question to a greater degree, given the scale of the project and resources available, the participant sample size would have been significantly smaller (Creswell & Plano Clark, 2011). Consequently, analysis would be based on only a few and would be difficult to extrapolate or draw conclusions to the group as a whole. Because Saskatchewan community pharmacy is diverse and spans the province, it is possible there could be large differences in pharmacists' experiences, depending on if they worked in rural or isolated communities versus if they practiced in larger urban settings. The experiences of a few risk misrepresenting the actual influence of ESoP on physician collaboration.

Creswell (2014) stated that quantitative assessment was as a particularly helpful research design at addressing and measuring how one variable influences the other. The primary objective of the study is to evaluate the influence ESoP has had on physician collaboration. Since the study explored how the change in one variable, ESoP, influences another, physician collaboration, a

quantitative approach provided the opportunity to assess and objectively measure that change. Maintaining objectivity was particularly important considering I am a practicing community pharmacist and have experiences and opinions about the subject matter that could result in bias in the interpretation of the results. A qualitative study by nature requires more interpretation of results by the researcher and therefore is potentially less objective than a quantitative approach. To further increase objectivity, the Community Pharmacy Collaboration Model (CPCM), which was derived from four theoretical models of collaboration, was used to measure collaboration. This model was created to help guide the type of questions asked as well as provide a stronger foundation from which to measure and analyze pharmacists' responses and draw conclusions.

Participant Solicitation and Criteria

Selection of participants for this quantitative study occurred through distribution of an electronic survey to the whole population of practicing community pharmacists in Saskatchewan. The population was determined using specific criteria. In the context of this study, all pharmacists who are registered as practicing community pharmacists with the Saskatchewan College of Pharmacy Professionals (SCPP) were invited to participate in the study. Targeting all members of the population provided an opportunity for a large sample size and increased generalizability, thereby strengthening results (Teddlie & Tashakkori, 2009). A questionnaire was developed using Survey Monkey, the official University of Saskatchewan survey tool. After approval from the University of Saskatchewan Research Ethics Board, permission and subsequent support was sought from the Saskatchewan College of Pharmacy Professionals (SCPP). The SCPP reviewed the study, the questionnaire, and the ethics approval and agreed to support the study by distributing the survey electronically to its members. Having SCPP distribute the study invitation and the reminder emails electronically may have increased participation by members due to enhanced comfort, familiarity, and trustworthiness with the

organization to participants. Additionally, SCPP's involvement created a separation of the study participants from the researcher to reduce any perceived biases. SCPP clearly informed all potential pharmacist participants in each email that SCPP would not have access to participant responses which gave assurances of confidentiality and anonymity. An invitation was sent to pharmacists to participate in the study and they were provided a link to the questionnaire. Participants who clicked on the link and completed the questionnaire were providing consent to their participation in the study (as outlined in the email invitation; see Appendix B). All participants' names, practice sites, and any other identifying information were excluded from the questionnaire to protect privacy and reduce bias. At the end of the questionnaire participants were offered entry to a prize draw for two $100.00 Tim Hortons or Starbucks gift cards. Those who were interested were redirected to a separate questionnaire that was not linked to their results, in which they could enter their contact information. They were also asked if they would like to be sent a summary of the research findings once they were available. Once data collection ended, responses were analysed, and themes formed.

Study Instrument

Questionnaire

A questionnaire was used as the instrument for data collection in the study. The purpose of the questionnaire was to provide the opportunity to develop a larger picture of pharmacists' community practices across the province and collect a variety of perspectives to better understand the influence ESoP had on physician collaboration. Fink (2013) suggested that when deciding on a survey's contents it is important to define the attitude, belief, value, or idea being measured. There are many definitions of collaboration in the literature. Every pharmacist, including myself, likely has their own opinion of collaboration and what activities they consider

ESoP activities. To help provide continuity of response and increase its validity, a theoretical model of collaboration, CPCM, was used to help guide some of the questions for the questionnaire. This model was created by examining existing strategies for measuring collaboration in the literature and applying concepts applicable to a community pharmacy setting. Having a framework to guide some of the questions helped improve objectivity and assisted in the analysis of the results. Further, definitions of terms such as quality, exchanges, and collaboration were included to ensure consistency and clarity in understanding.

The choice of question style consisted of both closed-ended and open-ended questions. Closed-ended questions included multiple choice, ranking, checklist, and 5-point Likert style. The primary style of question utilized throughout the questionnaire was multiple choice. Multiple choice questions have proven themselves to be more reliable and efficient (Fink, 2013). They are easy to use, score, and provide uniform data (Fink, 2013). I chose to include open-ended questions in addition to closed-ended questions. Closed-ended questions require respondents to interpret them the same way, whereas open-ended can provide the opportunity for participants to share their opinions in their own words (Fink, 2013). Including open-ended questions allowed pharmacists to state their thoughts, opinions and experiences on collaboration in their own words, using their own terminology. This approach might reduce participants from being steered to answer questions in a certain way and reduces the misinterpretation of answers. Furthermore, it serves as the necessary building blocks for the formation of new ideas and theories which could be further explored in future research. Farrell (2016) stated that "open-ended questions prompt people to answer with sentences, lists, and stories and giving deeper and new insights" (para.1). Given the size of the potential participant pool, the number of open-ended questions was limited to two questions.

The questionnaire was divided into two parts: community pharmacy and pharmacist demographic information; and questions pertaining to ESoP and collaboration with physicians. The first section of the questionnaire consisted of Likert type questions. The goal was to try and obtain the most information in a reasonable amount of time considering the questionnaire was sent to pharmacists who work in a busy community pharmacy setting. The first section's purpose was to obtain demographic information, such as years of practice, type of pharmacy setting, volume of prescriptions and other demographic data. This data helped the researcher gain information about the community pharmacists' practice setting and pharmacy experience to help provide some context to their responses and paint a general picture of the pharmacy landscape in Saskatchewan. The second section of the questionnaire focused on gaining insight into pharmacists' ESoP and collaboration with physicians. The section queried the level of engagement in the various types of ESoP activities and which were considered most beneficial to collaboration. Additionally, it helped provide more information regarding collaboration with physicians. The section consisted of multiple choice, Likert scale, ranking, and more open-ended questions pertaining to collaboration with physicians.

Once the questionnaire was crafted, a pilot test link was given to committee members and a local expert in survey design and assessment for their review and feedback. Fink (2013) stated that pilot testing can help make the survey more usable by revealing whether people understand the directions you have provided and determine if they can answer the survey questions. Further, it can improve the response rate by eliminating severe potential sources of difficulty, such as poorly worded questions. Experts given the pilot test had a range of different backgrounds and expertise to provide a comprehensive and multifaceted perspective on the questionnaire. Their feedback was incorporated into ongoing revisions to the questionnaire, until a final draft was completed.

A postal letter was sent via the Saskatchewan College of Pharmacy Professions (SCPP) to all 1165 licensed practicing community pharmacists in Saskatchewan. The letter contained relevant study details and invited pharmacists to participate in the study via an upcoming email containing the link to the study's online questionnaire. The postal letters and emails were sent to the personal email addresses provided by pharmacists to the Saskatchewan College of Pharmacy Professionals (SCPP) as part of their licensure process. Having SCPP distribute the study invitation and link to the online questionnaire provided separation from the researcher and the employer to decrease conflict of interest. Further, it may have improved the legitimacy of the study and thereby encouraged more people to participate. Procuring the information in the form of a questionnaire reduced unnecessary time querying all pharmacists in depth, especially those who indicate that ESoP has limited impact on their practice. Additionally, it reduced the volume of data collected to allow for a manageable workload for the researcher and better fit within the expectations of a master's thesis.

The questionnaire was anonymous; no names, addresses or personal identifiers, such as birth date, were elicited. All participants were fully informed on pertinent details of the study and were asked to provide consent to use of their information as part of the study. Their consent was implied when they clicked on the link.

Questionnaire Development

The decision of what content to use to guide the types of questions asked and the data acquired from the questionnaire was made by reviewing relevant literature in the area, guided by theoretical models of collaboration like the Community Pharmacists Collaboration Model (CPCM), and by applying my own knowledge and experience working as a community pharmacist and within an interprofessional capacity.

Part One – Demographic Information

The questionnaire's first section gathered demographic data about pharmacists and their practice sites. The demographic data served to paint a picture about the landscape of community pharmacy in Saskatchewan and provide the appropriate context to best understand the participants' responses and allow for comparisons between groups and variables related to ESoP or collaboration. Four of the six demographic questions pertained to size of pharmacy location, proximity to physicians' clinic, and average daily prescription volume and staffing. The other two demographic questions were related to pharmacists' characteristics such as years of experience practicing community pharmacy and position in the pharmacy.

The first question asked pharmacists to classify their pharmacy based on the location size. Classification was based on Statistics Canada (2017) definitions of large (>100,000 people), medium (30,000-99,999 people), small (5000-29,999 people), and rural (<5000 people) population sizes. This context is important because "internationally, there have often been suggestions of differences in community pharmacy practice between rural and urban locations" (Howarth, Peterson, & Jackson, 2020, p. 3). Further, Howarth et al. (2020) suggested that rural pharmacists may have a better working relationship with prescribers. Saskatchewan is a very geographically diverse province with community pharmacies spread through out various regions. Therefore, pharmacy practice could differ based on the practice location of the pharmacist.

The next question asked was the pharmacy's location in relationship to proximity to physicians' clinics. A report released in April 2019 by the Canadian Pharmacist Association titled Innovation in Primary Care, Integration of Pharmacists into Interprofessional Teams demonstrated that co-located pharmacists or "in-house" pharmacists resulted in improved interprofessional collaboration and patient outcomes. This information suggests that pharmacists'

experiences with collaboration may be different based on the physical location or proximity to the clinic. To account for this variable, community pharmacists were asked to classify the proximity of their community pharmacy practice site to the physician clinic.

Subsequent questions obtained information pertaining to pharmacist workload and staffing at the pharmacy. Community pharmacists were asked to estimate the approximate daily prescription volume and composition of the staff working at their community pharmacy practice site. Acquiring this information is relative since evidence suggests that a high workload can negatively influence the provision of services and act as a barrier to practice change (Lea, Corlett, & Rodgers, 2012). Workload can be defined as the amount of work completed in a specified period of time, such as the amount of prescriptions in a specified period of time (Lea, et al., 2012). Further, information on pharmacy staffing is relative to the analysis of ESoP and collaboration since pharmacists perceive delegation of tasks to non-pharmacists staff as being important for management of workload and to take on new professional roles (Lea et al., 2012). This may be particularly useful information to obtain in Saskatchewan since incorporation of registered technicians into pharmacies is relatively new.

The two demographic questions related to individual pharmacists' characteristics were the number of years of experience pharmacists had working in community pharmacy and if their position in the pharmacy was as a staff pharmacist, owner, manager, clinical pharmacist, or a floater/relief pharmacist. Pharmacists' ESoP has increased significantly in the last decade. Pharmacists who have practiced for one year may have a different perspective on the influence ESoP has had on physician collaboration than pharmacists who have worked over ten years, for example. With regard to the pharmacist position, Gregory, Teixeira, and Austin (2017) identified factors involved in influencing change and pharmacists' adaptation to the recent shift in

pharmacy practice with Extended Scope of Practice (ESoP) activities. In their discussion, they recognized that pharmacy managers', owners', and staff pharmacists' level of engagement, direction provided, and positive reinforcement of practice changes could have an effect on implementation of these changes. My own experience working in community pharmacy has reinforced that the staffing position held at the pharmacy can have an influence on the level of engagement in ESoP activities. Having pharmacists' years of experience and position included in the data allows for comparisons and correlations to be made between responses.

Part Two – Expanded Scope of Practice and Collaboration Information

Part two of the questionnaire contained 11 questions related to ESoP and physician collaboration. The first two questions were to gauge pharmacists' level of involvement in ESoP activities compared to traditional activities and determine which specific ESoP activities they were most involved in. The responses to these questions were used to directly answer the study's research questions. In addition, the information helped in comparative analysis of the responses in the data analysis portion of the study. Comparing responses based on level of involvement can help identify differences in responses between pharmacists with low and high levels of pharmacist engagement and gain further insight on the influence of ESoP on physician collaboration. Pharmacists who spend a large percentage of their workload on ESoP activities may offer a different perspective to its influence on physician collaboration than pharmacists who have limited involvement. Furthermore, the information acquired could identify differences in ESoP engagement or notable correlations between groups. For example, does ESoP engagement differ based on pharmacy location, workload, or years of pharmacist experience etc.

Two questions pertained to the medium pharmacists used for exchanges. Community pharmacists were asked which medium they primarily used for collaboration with physicians and

which was the most effective for collaboration. Medium options were phone, fax, in-person, text or digital messages, emails, or round-table discussions. Pharmacists were asked to select which type of medium they most commonly used for exchanges with physicians and which were the most effective for collaboration. I intentionally did not provide pharmacists a rigid definition for what was considered 'effective'. Oandasan et al. (2006) portrayed collaboration in a broader sense; these authors described collaboration as the collective action toward a goal. They acknowledged that collaboration is a process that requires relationships and interactions between healthcare professionals. As a result, it is ultimately the health care professionals themselves who determine when collaboration has occurred. Oandasan et al. (2006) viewed collaboration as a spectrum involving a wide range of interactions, depending on the type of care required. This view of collaboration seems less restrictive and more consistent with the collaborative practices experienced in community pharmacy. Allowing the pharmacists to determine what they considered effective seemed appropriate, especially considering the limited knowledge available exploring collaboration practices in a community pharmacy setting.

Communication is a key element identified in various theoretical models of collaboration such as Artimage's and Hudson's model. Identifying how communication is done in community pharmacy is relevant if we are to have a complete picture of collaboration in the community pharmacy setting. One of the biggest challenges to collaboration unique to community pharmacy is the fact that most pharmacies have physical separation away from physicians that can limit the opportunity for in-person interactions or more formalized discussions. The organized structure of institutional facilities like hospitals or structures within the health regions facilitates communication and collaboration between health care professionals; however, collaborative practice in the community is more challenging (Kelly et al., 2013). Having a better understanding of how pharmacists are collaborating given the restrictions of this separation

should help provide a more comprehensive perspective of how the medium used supports or hinders collaboration. Further the CPCM model used to guide the study places emphasis on evaluating collaboration in terms of exchanges; thus the mode in which it is occurring is relative.

There were several ways that the questionnaire was used to evaluate the influence of ESoP on physician collaboration. The most direct was to simply ask pharmacists directly via an open-ended questions. This allowed for pharmacists to state in their own words its influence. The next strategy was to use the CPCM as a guide. Unlike other models of collaboration, the CPCM adapts previous theoretical models of collaboration to put emphasis on exchanges. It places exchanges in the context of those that are differentiated compared to those more integrated. Several questions included in the questionnaire were designed to get data on the frequency of these exchanges. Pharmacists were asked to quantify the frequency of exchanges of traditional pharmacy activities compared to ESoP activities. Further they were asked to agree, strongly agree, neither agree or disagree, disagree, or strongly disagree with statements on ESoP ability to increase contact, pharmacist-initiated exchanges, bilateral exchanges, physician-initiated exchanges, partnerships or verbal agreements, written agreements, and CPAs. The data obtained would help assess ESoP influence on physician collaboration through the lens of the CPCM.

Along with evaluating the frequency of exchanges were questions assessing the quality of the exchanges. The term ‘quality’ in the context of this study was defined as sharing information, making recommendations, and decision making that have the potential to improve patient care outcomes or health system outcomes. This definition was derived from Oandasan et al.’s (2006) view of teamwork and collaboration in healthcare. Based on this definition pharmacists were asked to rate the quality of the exchanges made with ESoP versus those from traditional exchanges. Further, pharmacists were asked if ESoP activities increased information sharing

with physicians. Oandasan et al. (2006) also viewed teamwork as a product of collaboration and collaboration as a process of interactions and relationships between health professionals. Subsequently, a question was included addressing ESoP ability at improving relationships with physicians. The last question added to address the quality of the exchange was ESoP effect on role awareness. The CWR model has two of its five stages devoted to role recognition and awareness and is considered an important element particularly in the formation of collaborative relationships.

The remaining two questions asked on the questionnaire were related to collaboration in general. Pharmacists were asked to state via an open-ended question, in their own words, strategies for fostering collaboration with physicians. This question directly answers one of the study's research questions. Lastly, pharmacists were asked to categorize the current state of the collaborative relationship with the physician or physician groups with whom they work and which strategies they considered effective for fostering collaboration with physicians. Rather than having pharmacists simply state whether they have or do not have a collaborative relationship, I wanted to increase the specificity and determine more specifically what type of collaborative relationship was present by providing seven options of possible collaborations. Because I could not find data in the literature specifically listing pharmacist and physician relationship classifications or ranking, I constructed the seven selections based on how pharmacist and physician relationships were often described in individual pieces of literature on the subject matter and coupled them with the knowledge I acquired on collaborative relationships through my experience working in a community pharmacy practice. The following collaborative relationship classifications between physicians and pharmacists were formed:

- A CPA (Collaborative Practice Agreement) formalized through SCPP to perform activities or services.
- A written agreement to perform activities or services.
- A verbal agreement to perform activities or services.
- No written or verbal agreement; however, a cooperative relationship in which they work well together regarding individual patients or tasks consistently.
- Limited collaboration. Communication is one-sided and limited to technical matters related to filling prescriptions.
- No collaboration. As professionals they work independently almost exclusively.
- Hostility, conflict, or opposition when dealing with physicians or physician groups

The questionnaire was thoughtfully designed to provide much data to be collected and used for analysis.

Data Collection

Neuman and Robson (2009) stated that quantitative design has a variety of data collection methods such as content analysis, existing statistics, surveys, and experiments. The data collection method chosen for this study was survey research. Survey research involves systematically asking many people the same questions and then recording and analyzing their responses (Neuman & Robson, 2009). In this study, a questionnaire was sent to all 1165 licensed practicing community pharmacists, with the intention of obtaining an overview of pharmacists' thoughts and providing further insight into this relatively unexplored area.

A mixed-mode data collection was used in survey design (Dillman, Smyth, & Christian, 2014). Initially a letter was mailed to all practicing licensed community pharmacists. The letter outlined pertinent details about the study, notified pharmacists of the upcoming email with the

online link to the questionnaire, and offered a mailed paper copy of the questionnaire, if desired. Ten days later pharmacists received an email invitation, through SCPP, to participate in the online survey via a link provided. Traditionally, having a second mode offered an alternative means for people to participate, in case one mode was more appealing than another (Dillman et al., 2014). However, in today's environment, multiple modes of communication can be a powerful way to encourage response to single mode of survey delivery and improve the survey's response and the quality of those responses (Dillman et al., 2014). Millar and Dillman (2011) noted that response rate improves when following a postal request with an email containing a link to an online survey. Mixed-mode survey design can use these multiple contact points to have the various modes work synergistically to convince participants to respond (Dillman, et al., 2014). My questionnaire's response rate was 15.6%. Unfortunately, the timing of the survey was not ideal because the questionnaire was not distributed during the summer months; that left very little time for a three week window before the start of influenza season, a busy time in the pharmacy. Further SCPP did not send the last email reminder invitation, due to some complaints from members that the multiple email invitations were a nuisance, particularly when they already completed the survey. The mixed-mode method may have contributed to my relatively favorable response rate of 15.6%, even though there were other factors that may have negatively impacted response rates.

The questionnaire was designed into two parts, part one had six questions on demographics and part two had 11 questions on ESoP and collaboration. The responses in part one were mandatory meaning that participants were not allowed to select "Next" and continue to part two of the questionnaire unless all fields had a response entered in. Part two contained 11 questions however responses were not mandatory for all fields. At the end of the questions was a confirmation button marked "Done" that pharmacists selected when they felt satisfied with their

responses and were ready to submit them. Only questionnaires that were submitted by the pharmacists selecting “Done” were included in the analysis and the study’s response rate.

215 or 18.5% out of 1165 community pharmacists sample size completed part one of the study questionnaire via the link provided in the email invitation. However only 183 of out of the 215 or 15.7% of the 1165 study sample size questionnaire responses were submitted by the pharmacist. Submission of their answers was completed by pharmacists selecting the “Done” button after answering questions in part two of the questionnaire. In the remaining 32 of the 215 responses, pharmacists did not click the “Done” button needed to submit their responses and therefore any answers they may have entered were not recorded or included in the study. Almost all 183 pharmacists completed the 9 closed-ended questions in part two, however only three-quarters answered the two open-ended questions in part two of the questionnaire. Responses produced from the questionnaire were analyzed, and open-ended responses coded. This data was used to start to formulate results and draw conclusions. Data collected will be secured for a five year time frame on the researcher’s password protected One Cloud account and then destroyed to maintain confidentiality.

Data Analysis

Data analysis in this study was completed in two distinct phases, phase one used descriptive statistics on all the closed-ended questions, followed by coding of the responses for the two open-ended questions. A data summary was presented in the form of bar graphs, histograms, and pie charts. Data analysis was primarily computed in the form of percentages and averages depending on the questions being asked. Data acquired were also divided between groups for comparison. For example, when further analyzing pharmacists’ response on the influence of ESoP, two groups were created to compare answers; those pharmacists who reported

spending more than 40% of their workload on ESoP compared to those who reported spending less than 20% of their workload. Another comparison made was reviewing pharmacists' responses based on urban or rural location size, to determine any major deviations between groups.

Pharmacists' responses to open-ended questions were reviewed, analysed, and reoccurring themes identified. The goal of data analysis is to make sense of the data by consolidating, reducing, and interpreting responses and what the researcher has read (Merriam, 2009). Data analysis involves a systematic strategy for analysing a data set (Merriam, 2009). Common themes obtained from the research data were recorded and subcategories created. Fink (2013) suggested that it is more advantageous to have a larger number of subcategories, since it is easier to combine them later rather than break categories apart. After all the subcategories were created they were grouped into core categories. The core categories functioned as the main conceptual element by which all other categories and properties were connected (Merriam, 2009). Results were recorded based on the frequency of times the theme was identified in the responses. For example, if a pharmacist mentioned in their open-ended response that ESoP improved communication, then it was given a score of one. If it was mentioned several times in one pharmacist's comments, it only received a maximum score of one per person. The overall score was calculated for each subcategory and core category and displayed in a chart form. Bar graphs and pie charts were also used to illustrate and compare responses. Further steps were taken with the data to help improve trustworthiness, as described in the following section.

Trustworthiness of Data

Neuman and Robson (2012) stated that researchers want their measurements reliable and valid in order to establish credibility, truthfulness, and believability of their findings. Reliability

refers to dependability or consistency of findings (Neuman & Robson, 2012). “It suggests that the same thing is repeated or recurs under the identical or very similar conditions” (Neuman & Robson, 2012, p.109). Validity refers to the degree of truthfulness or how well the construct fits with reality (Neuman & Robson, 2012). Fink (2013) purported that reliable and valid surveys produce consistent and accurate information. The following steps were taken in the study to increase reliability, validity, and reduce researcher bias.

Reliability

Bolarnwa (2016) refers to reliability as the degree a test or measurement such as a questionnaire can produce the same results. There were several steps taken to increase this study’s reliability. The questionnaires used for data collection had clear definitions defining terms used throughout the questionnaire for improved clarity. Furthermore, the questions were developed based on theoretical models of collaboration derived from the literature. Neuman and Robson (2012) stated that reliability is increased with clearly conceptualized, unambiguous constructs to reduce distractions. Fink (2013) supported this notion by suggesting that reliable and valid surveys have definitions and models used to select questions that are grounded in theory and experience. The theory used to guide questions was the Community Pharmacists Collaboration Model (CPCM). This theory was formed examining existing models of collaboration in the literature and creating a new model more applicable to a community pharmacy setting. The second method used to increase reliability was to increase the level of measurement. When indicators are higher or more precise the levels of measurement increase and more detailed information is obtained, thereby enhancing its reliability (Neuman & Robson, 2012). In this study the levels of measurement were increased by including questions that had response options based on a 5-point Likert scale rather than a 3-point Likert scale or via yes or

no style questions. Answer options included strongly disagree, disagree, neither, agree, and strongly agree. Another method used to increase reliability was to provide a pilot of the questionnaire. Pilot tests help determine ahead of time if the survey is well-constructed, comprehensible and user friendly (Fink, 2013). The pilot questionnaire was given to three professionals. Feedback was provided and used to make minor modifications to improve clarity and ease of use.

The last method used to increase reliability of the questionnaire was to use principles derived from alternate-form reliability. Bolarinwa (2016) described alternate form as the amount of agreement between two or more research instruments. Often this involves using a differently worded questionnaire to measure the same attribute or construct (Bolarinwa, 2016). While it was not practical in this study to re-administer another questionnaire with re-worded questions, I did ask multiple questions regarding the same construct through-out the questionnaire such as questions pertaining to the frequency of exchanges, relationships with physicians, and the influence of ESoP on collaboration. Having alternate strategies in place to help determine if answers to the differing questions reproduced the same responses, played a role at increasing the reliability of the results and conclusions made.

Validity

Cohen, Manion, and Morrison (2011) identified validity as being a vital aspect in creating effective research. They stated that in quantitative research data validity may be enhanced through careful sampling, suitable instrumentation and appropriate statistical treatments of the data (Cohen, Manion, & Morrison, 2011). A variety of decisions were made to ensure that careful sampling was implemented in this study's design to increase its validity. The sample was limited to all licensed practicing community pharmacists in Saskatchewan. Pharmacists in

Saskatchewan can work in a variety of roles, such as hospital, community, academia, industry, corrections, government etc. Although hospital pharmacists also have experience with physician collaboration, expansion of the pharmacist's role is the most applicable to community pharmacists. Community pharmacists comprise the majority of pharmacist positions in the province and are, therefore, the most representative of the group. In addition, only practicing pharmacists were invited to participate, since expansion of the pharmacists' role has occurred most heavily recently. Therefore, data acquired represents the largest group of pharmacists and targets those most affected by ESoP.

Another strategy incorporated within the study to increase validity was the use of appropriate instruments. Cohen et al. (2011) expressed that devising appropriate instruments that are accurate, representative, relevant, comprehensive, and reflect the complexity of issues, can increase validity. Further they suggested proper readability level, unambiguous instructions, terms, and questions. The questionnaire used in the study was designed to include relevant and comprehensive data that represented the current state of ESoP in the province. Including demographic data such as years of work experience, position, prescription, workload, staffing, medium of collaboration, and engagement in ESoP activities helped provide the required context to best interpret and analyze responses. Additionally, it helped control other variables that may be contributing factors to responses provided.

Researcher Bias

My experience working in community pharmacy, with ESoP activities, and in collaborative practice has the potential to add to researcher bias in the design and interpretation of the data acquired from the study. Consequently, many steps were taken to assist in minimizing this bias throughout the research process. The first step was to do an in-depth internal self

exploration, identify relevant experiences, and share it in my positionality portion of my research. Creswell (2014) stated that to strengthen a study it is important for the researcher to self-reflect and to clarify the bias that a researcher brings through an open and honest narrative. Through this process I was able to identify specific life experiences and expose underlying personal characteristics that had the potential to influence my study design and interpretation. Being cognizant of this helped me identify and proactively make decisions to minimize potential interference of my biases in acquiring objective study data and results.

The next step was to choose a study design which was less likely to cause bias. Neuman and Robson (2012) stated that a quantitative study design is more likely to use explicit and standardized procedures with an emphasis on objectivity. An additional method used was to find a theoretical conceptual model on collaboration to use to help shape my study design (Neuman & Robson, 2012). Modeling my study on foundational pieces on collaboration and utilizing clear definitions from the literature helped ensure the design was based in scientific evidence rather than via my own experiences. Further, the study questionnaire included open-ended questions on the most essential research questions so that pharmacists had the opportunity to state in their own words their opinions rather than just through the predetermined options offered by the researcher in the Likert-scale questions. In addition, open-ended responses were coded by the researcher and then forwarded to a non-pharmacist professional to ensure there was no obvious bias influencing the coding of the responses. Neuman and Robson (2012) recommended that a single researcher find another person to cross-check their codes to increase reliability of the study. Another step was for the questionnaire tool to be pilot tested by three different professionals to have an alternative perspective on it. All of these steps were incorporated into the study to help assist in acquiring more objective findings and minimizing researcher bias. Querying pharmacists through two different question-styles also provided a certain degree of triangulation

in the design to help obtain accurate data. Having converging sources of perspectives from participants can help build themes, thereby adding to the validity of the study (Neuman & Robson, 2012).

Ethical Considerations

This study was submitted to the University of Saskatchewan Research Ethics Board and given approval. Risk to participants in this study was taken into consideration and appropriate steps taken to minimize the risk. Risks included participating pharmacists being identified and their opinions and activities made known to others. Sharing of pharmacy information could be prohibited by some pharmacy chain employers and has the potential of a pharmacist having to contend with consequences of doing so. Additionally, a pharmacist's reputation could be negatively affected if their opinions were identified. Since the pharmacy community is small and often tight knit, differing opinions could limit future pharmacist opportunities and collaborations.

To minimize risk, the questionnaire was distributed to participants by the Saskatchewan College of Pharmacy Professionals via personal emails listed in their registration, thereby, providing distance from their employer and the researcher's opinions and affiliations in the community. SCPP also provided confirmation in every email sent to participants that SCPP has no access to participant responses as an added assurance of respondents' anonymity. The questionnaire was confidential and did not have detailed specificity, to reduce the likelihood of associations being made and participants inadvertently identified. All participants were fully informed on pertinent details of the study and asked to provide consent. They could choose to close their browser at any time and exit the survey; incomplete surveys were not included in data analysis. Data collected will be secured for the allotted time frame on the researcher's password protected One Cloud account and then destroyed to maintain confidentiality.

Summary

A 17-question questionnaire (Appendix A) was used as the instrument to obtain data about practicing community pharmacists' demographics, experience with ESoP, and physician collaboration. The intention was to acquire data directly from many practicing community pharmacists from varied practice locations. Attempts to improve trustworthiness of data acquired were incorporated into the study design to enhance the reliability, validity and reduce researcher bias. Data were collected, coded and analyzed, and used to try and gain some insight into this area of study, with the hope of providing more information about expanded scope of practice and physician collaboration. The data collected from the study were compiled and organized in the following chapter. Chapter Four includes a complete presentation of findings and summarizes the data in a format to help provide a comprehensible interpretation of the results.

CHAPTER FOUR: FINDINGS

The objective of this study was to obtain perspectives from practicing community pharmacists about how expansion of the pharmacists' role has influenced collaboration with physicians. Additionally, the study queried how engaged pharmacists were in expanded scope of practice (ESoP) activities versus traditional activities and asked pharmacists to share effective strategies for physician collaboration. A quantitative study design was chosen to gather a large amount of information and opinions on the subject matter. Data were collected by emailing a link to a 17-question online questionnaire to all licenced practicing community pharmacists in Saskatchewan. The Saskatchewan College of Pharmacy Professionals (SCPP) distributed the link to 1165 pharmacists. Of the 1165 pharmacists, 215 pharmacists responded to the questionnaire; however only 183 of those submitted their responses at the end of the questionnaire. Only the 183 responses that were submitted at the end of the questionnaire were used in the study.or approximately 16% of practicing community pharmacists. The results are as follows.

Demographic Data

The questionnaire's first section gathered demographic data about pharmacists and their practice sites. The first question asked pharmacists to classify their community size based on where the pharmacy was located. Classification was based on Statistics Canada (2017) definitions of large (>100,000 people), medium (30,000-99,999 people), small (5000-29,999 people), and rural (<5000 people) population sizes. According to the Saskatchewan College of Pharmacy Professionals (SCPP, 2020), the SCPP registry of practicing community pharmacists indicated that 50% practice in large urban centres, 10% in medium centres, 14% in small centres, and 26% in rural centres. The questionnaire yielded similar results of 44% (n =95) of practicing community pharmacists from large urban centres, 11% (n=23) from medium centres, 22% (n=46) from small centres, and 23% (n=49) from rural centres. *Figure 4.1* provides the

percentage of the respondents who are practicing in large, medium, small centre settings and how many are rural or remote settings.

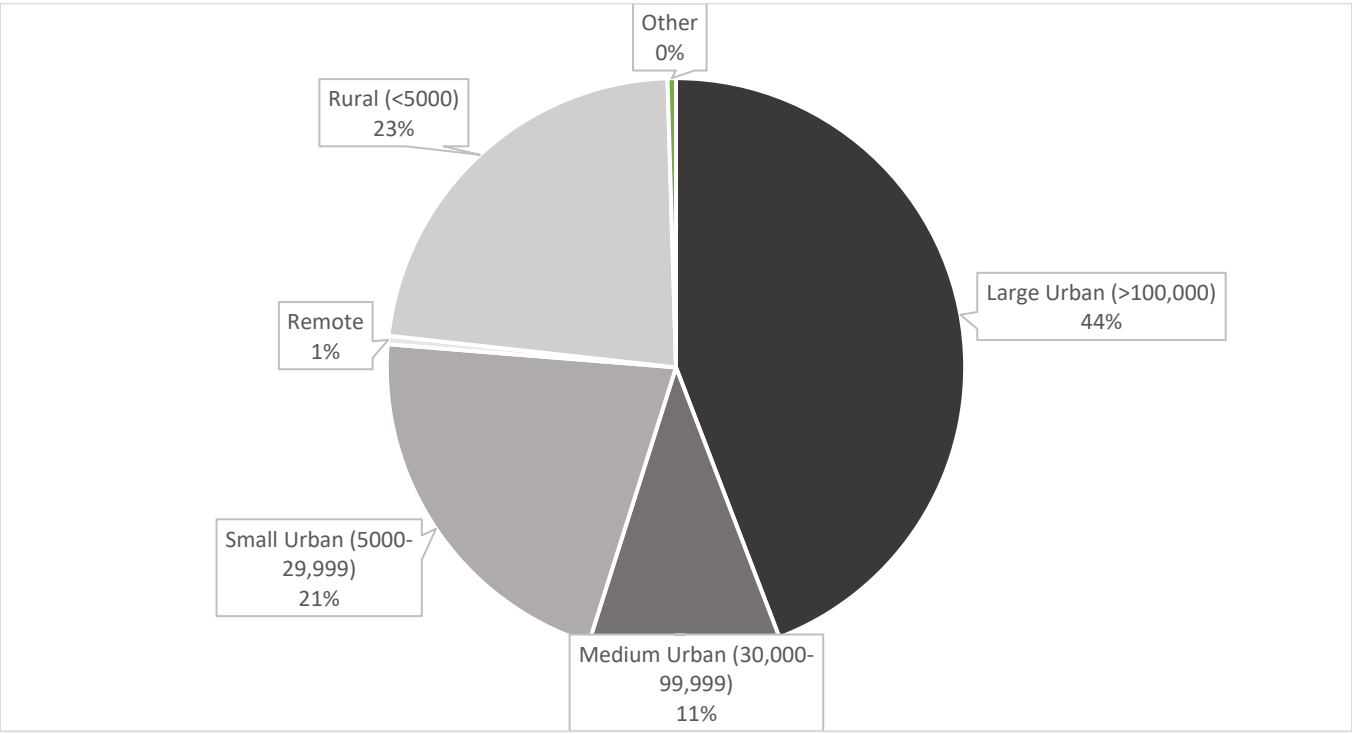


Figure 4.1 Community pharmacy location (in %) of practicing community pharmacist respondents

Figure 4.2 reflects what percentage of pharmacists categorised their pharmacy as within, beside, within 2 blocks, in the same, or in a different town or city as the physician groups with whom they work.

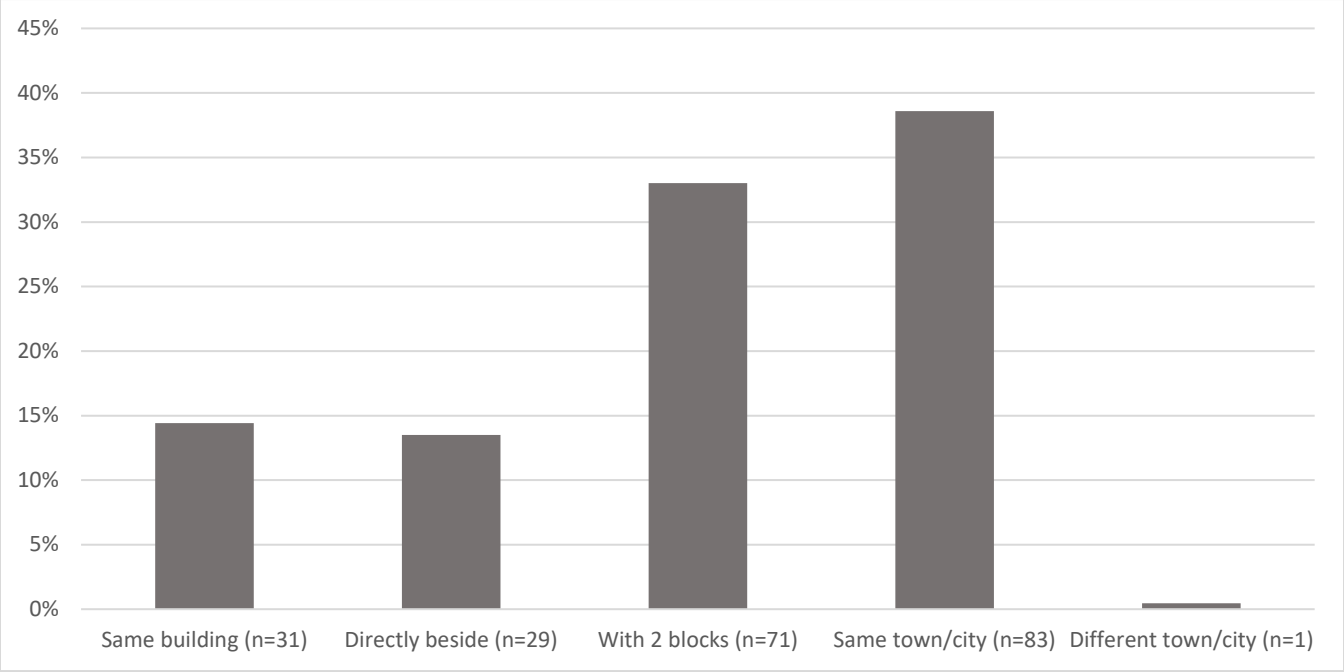


Figure 4.2 Community pharmacy's proximity to physician clinic (in %) of practicing community pharmacist respondents

Figure 4.3 represents the average number of prescriptions performed in a typical day at the community pharmacy at which they worked. Results are displayed as the percentage of pharmacists who estimated their daily prescription workload within the following ranges.

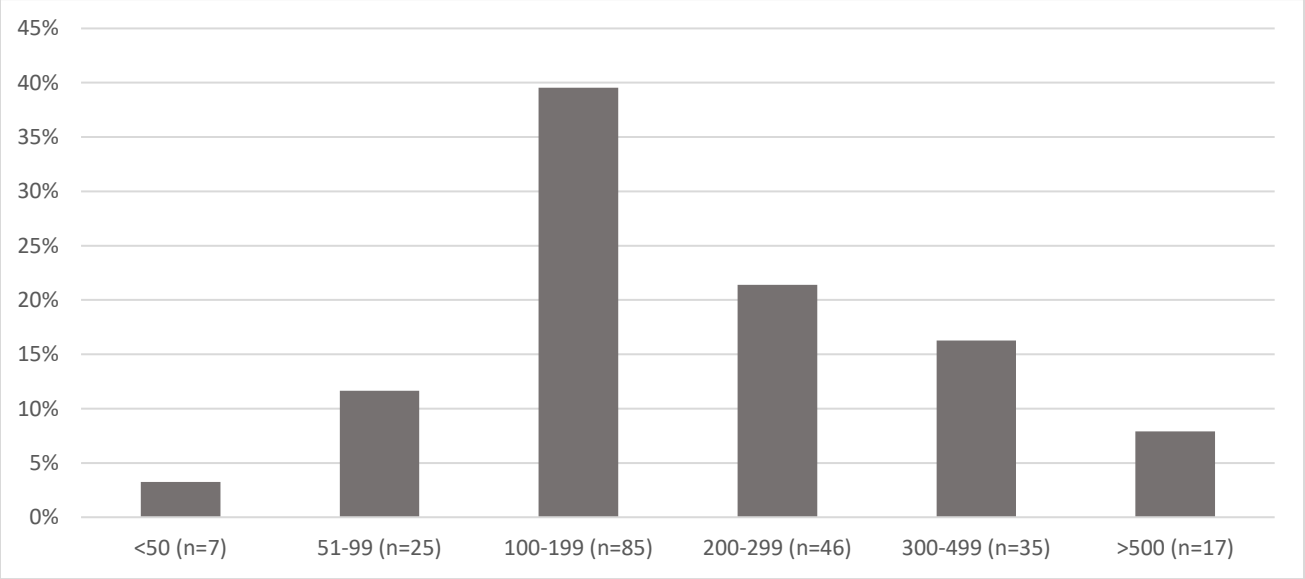


Figure 4.3 Average number of daily prescriptions completed at community pharmacy practice site

Community pharmacists were asked to estimate the approximate composition of the staff working at their community pharmacy practice site. *Figure 4.4* represents what the average number of pharmacists, registered and non-registered technicians, as well as assistants working a typical 8-hour shift in the pharmacy. Results are displayed as the percentage of pharmacists who estimated each number of the different type of pharmacy staff working during a typical 8-hour shift.

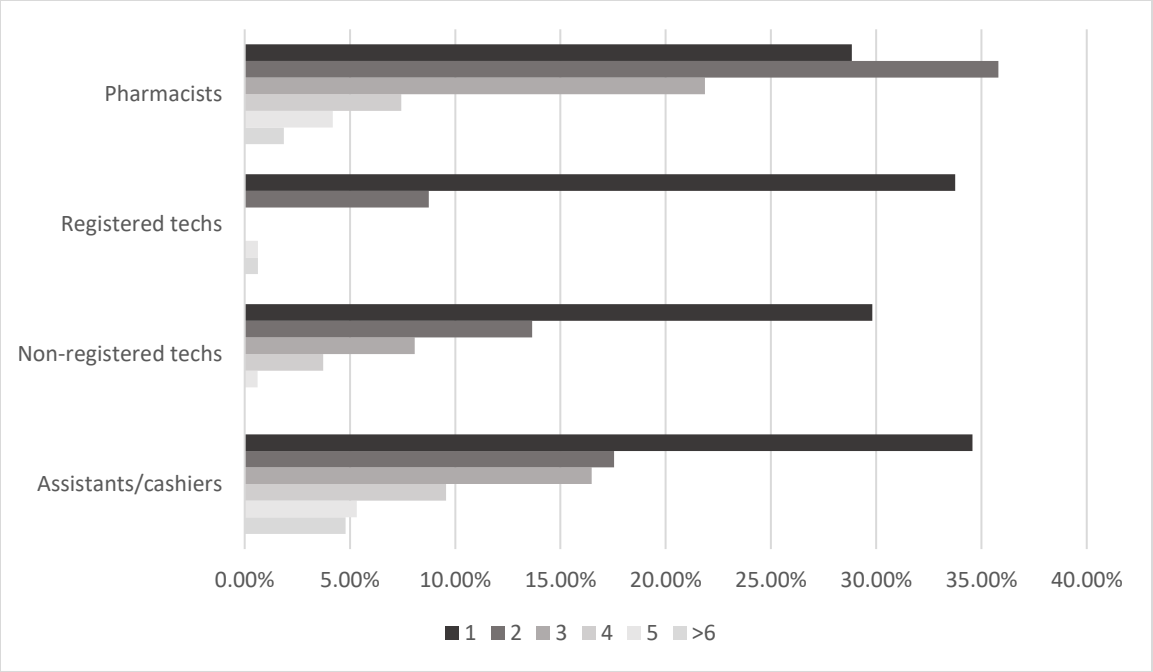


Figure 4.4 Average number of pharmacy staff working a typical 8-hour shift in community pharmacy practice site

Figure 4.5 depicts what positions pharmacists hold at their pharmacy location. Results are posted as percentage of total pharmacist respondents who hold the following position of: owner, staff pharmacist, clinical pharmacist, floater/relief pharmacist or pharmacy manager.

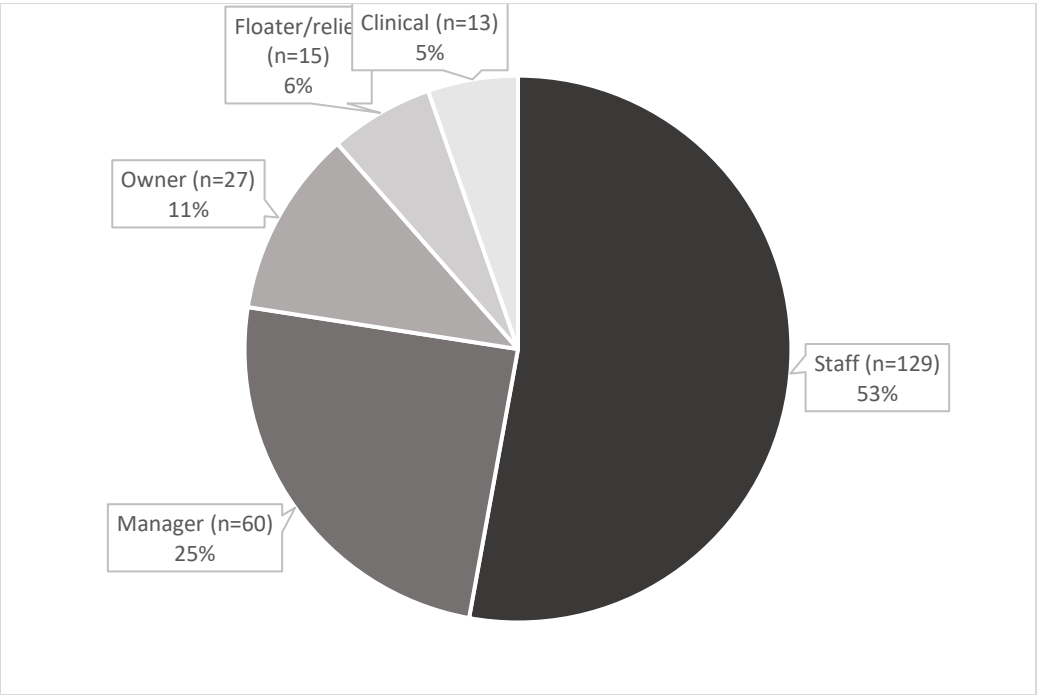


Figure 4.5 Community pharmacy's position (in %) of practicing community pharmacist respondents

Figure 4.6 provides a breakdown of how long respondents have been practicing in community pharmacy.

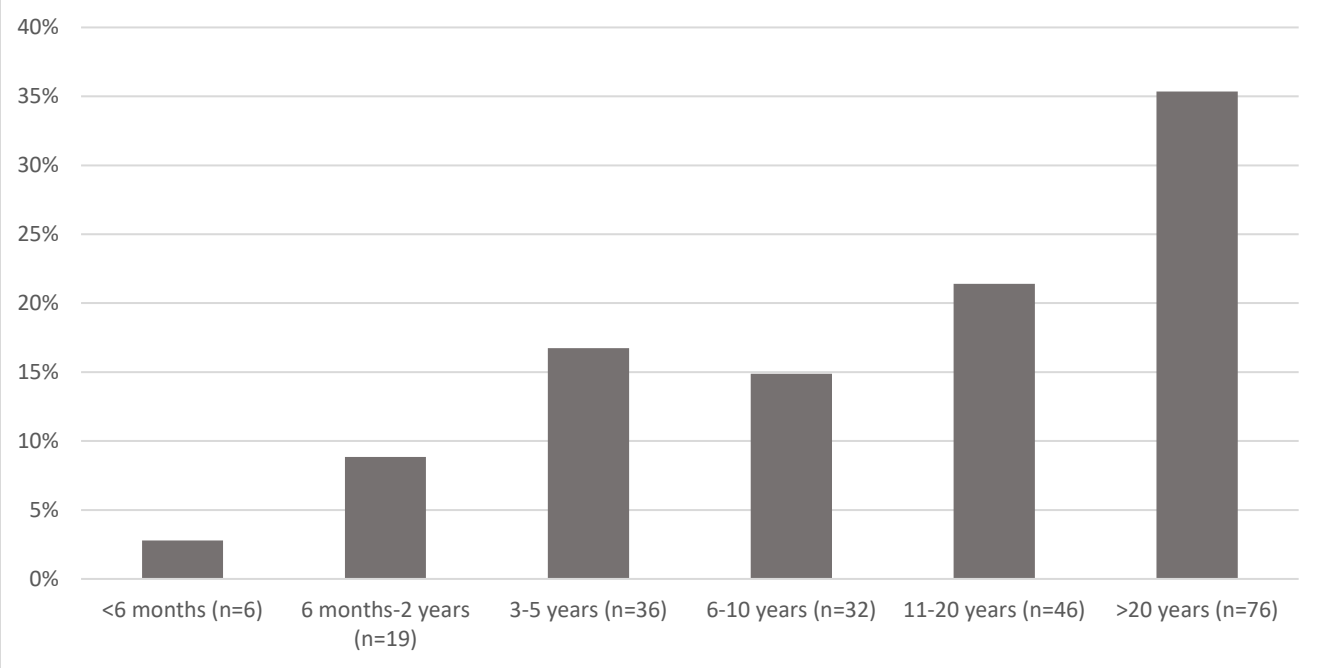


Figure 4.6 Average years of experience (in %) of community pharmacist respondents

The results show that most of the pharmacists who participated in the questionnaire had a wide array of experience in community pharmacy, ranging from less than six months to over 20 years. The majority of pharmacists had over ten years of experience working as a community pharmacist. In fact, over a third of all responses were from pharmacists who had over twenty years of experiences.

Summary of Demographic Data

Demographic data acquired from the questionnaire indicate that practicing community pharmacists were from a wide range of community pharmacies across Saskatchewan, work in different capacities within the pharmacy, and have a large range of experience. The following information provides data comparing ESoP activities to traditional pharmacy activities.

Expanded Scope of Practice Activities versus Traditional Pharmacy Activities

On average, pharmacists estimated that they spend roughly 30% percent of their workload or approximately 2 hours and 24 minutes of an 8 typical hour shift, providing ESoP activities compared to traditional pharmacy activities. There were a wide range of responses in pharmacists' estimated time spent in ESoP activities. *Figure 4.7* provides a visual depicting the array of involvement in ESoP. Data are presented as the percent of a community pharmacist's workload performing ESoP activities.

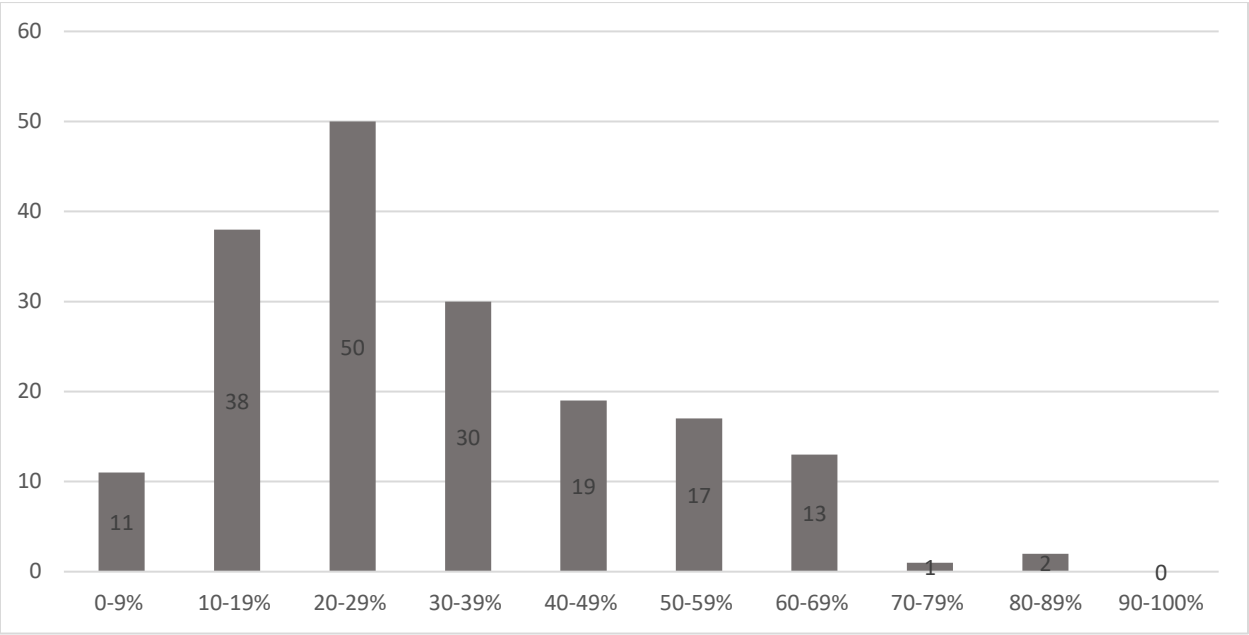


*Figure 4.*7 Pharmacists' estimation of their approximate workload spent on providing ESoP activities compared to traditional pharmacy activities

ESoP activities include a wide range of possible activities that differ from the traditional activities that pharmacists customarily practice. The questionnaire asked pharmacists to share which types of ESoP activities they most frequently provided to their patients. Pharmacists were asked to rank the various ESoP activities on a scale of one to ten with ten being their most frequent activity. The figure below illustrates pharmacists' level of engagement in the various types of ESoP, arranged from most reported to least.

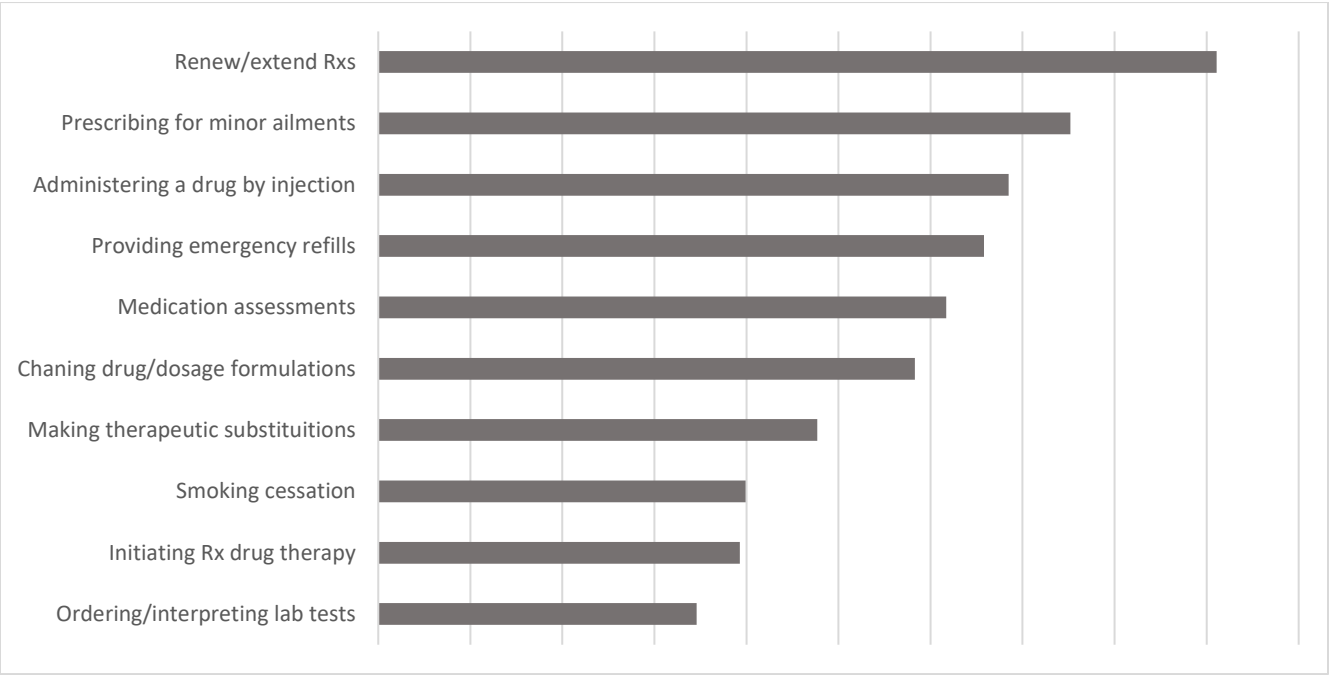


Figure 4.8 Ranking of community pharmacist engagement in ESoP activities

The ESoP activities pharmacists performed the most were: renewing prescriptions, prescribing for minor ailments, and administering a drug by injection. With the exception of influenza injections, all of these ESoP activities require communication by the pharmacist to the patient's physician.

Frequency of Exchanges

The term exchanges used in this study refers to the exchange of permission, information, and responsibility for patient care (McDonough & Doucette, 2001). This exchange may include any interaction with a physician including phone call, fax communication, email, electronic message, text message, email, or face-to-face interaction. Community pharmacists were asked to quantify the frequency of exchanges with physicians when engaged in traditional pharmacy services versus ESoP activities. The results from the questionnaire suggested that overall, traditional pharmacy services were more likely to occur daily compared to ESoP. However, the

more heavily pharmacists engaged in ESoP, the more they reported these physician exchanges occurred daily. An additional method used in the questionnaire to gauge the frequency of exchanges was to ask pharmacists if they strongly disagree, disagree, neither agree or disagree, agree, or strongly agree with statements that ESoP activities increased pharmacist-initiated, physician-initiated, and bilateral exchanges. The figure below compares the percentage of pharmacists who disagreed verses those who agreed with the statements.

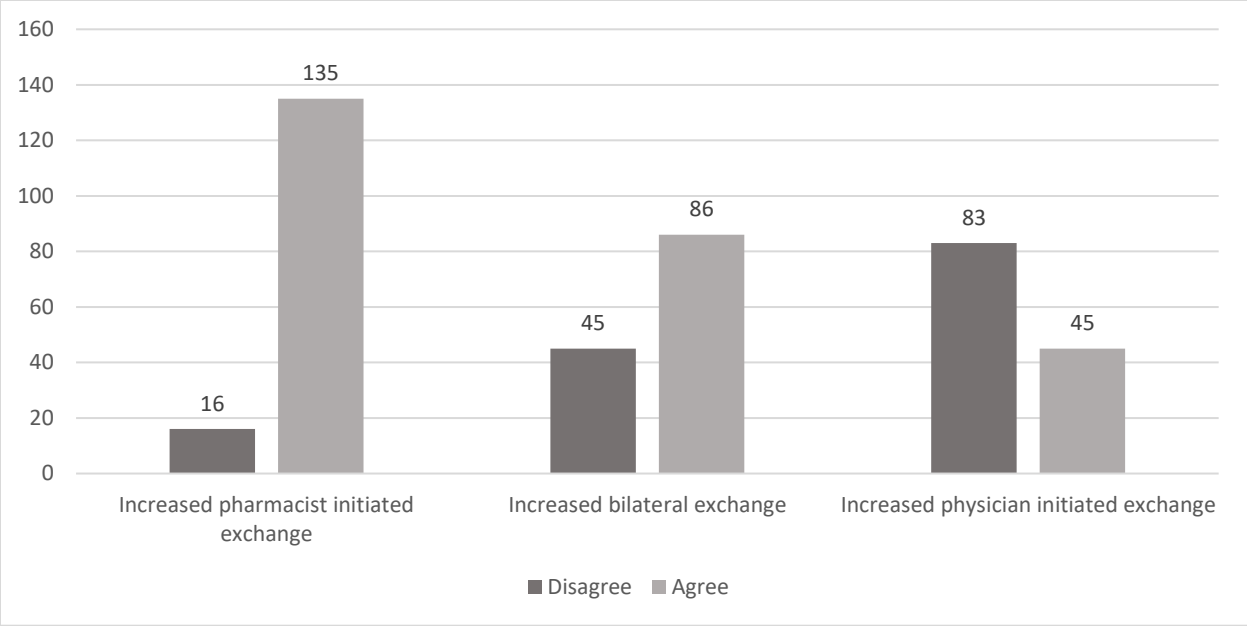


Figure 4.9 Comparison of the number of pharmacists who agreed verses disagreed with ESoP influence on exchanges with physicians

This data suggests that ESoP activities increased the frequency of exchanges initiated by the pharmacist and between pharmacists and physicians. However, most pharmacists felt it did not dramatically increase the likelihood of physicians initiating exchanges with pharmacists. For further analysis of the impact of ESoP on exchanges, the data was broken down into two groups: community pharmacists with low and high ESoP engagement. The average ESoP engagement pharmacists reported was 30% with the majority of respondents falling between the 20-40% range. Therefore for the purposes of this study, the cut-off point of <20% was considered low

ESoP engagement and >40% considered high ESoP engagementLow engagement is defined as pharmacists who were spending 20% or less of their workload on ESoP activities. High engagement is defined as pharmacists who were spending 40% or more of their workload on ESoP activities. The results for both groups are illustrated in the following figure.

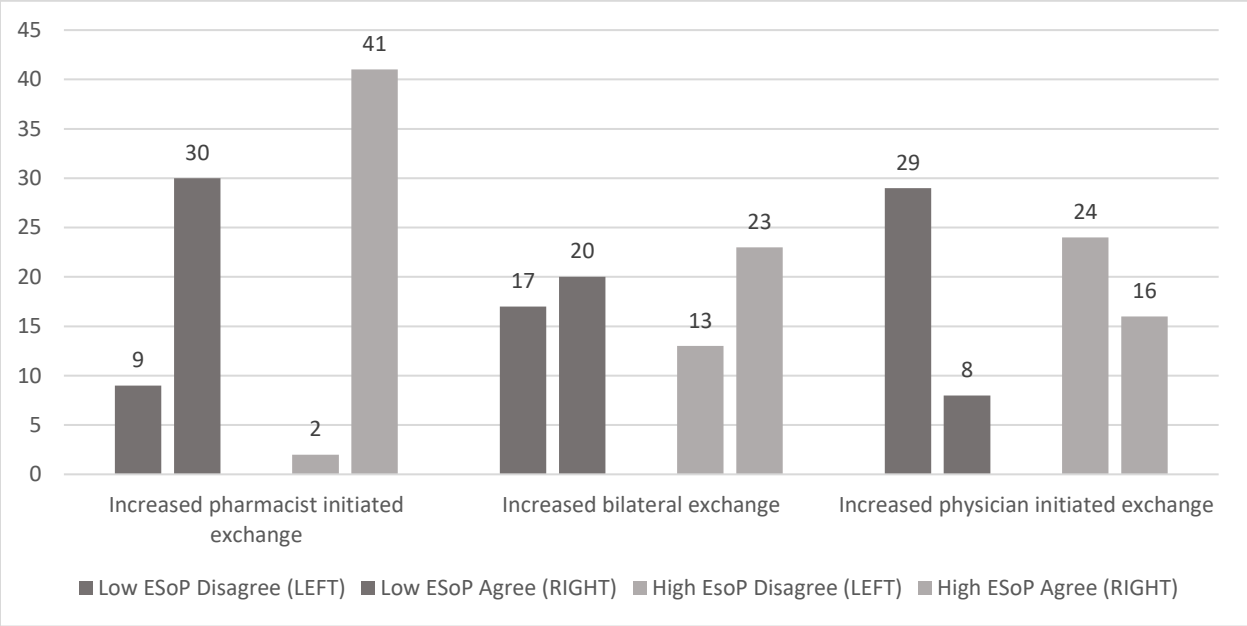


Figure 4.10 Number of pharmacists who disagree versus agree with the following statements on the influence of ESoP activities, based on low and high levels of pharmacist ESoP engagement

The results indicate that the more highly engaged pharmacists were in providing ESoP services, the more they considered ESoP beneficial in increasing exchanges between pharmacists and physicians.

Quality of Exchanges

The following sections of data focus on how the quality of the exchange with physicians differ when community pharmacists are performing traditional pharmacy services compared to ESoP services. The term ‘quality’ in the context of this study connotes actions such as sharing information, making recommendations, and decision making that have the potential to improve

patient care outcomes or health system outcomes. Pharmacists rated exchanges with ESoP as being 20% higher in quality and 30% less likely to have a low-quality exchange, compared to traditional pharmacy services. A visual of how community pharmacists rated the quality of exchanges of traditional versus ESoP activities is depicted in *Figure 4.11* below. The figure presents the data when grouped together regardless of the pharmacists' level of engagement in each activity.

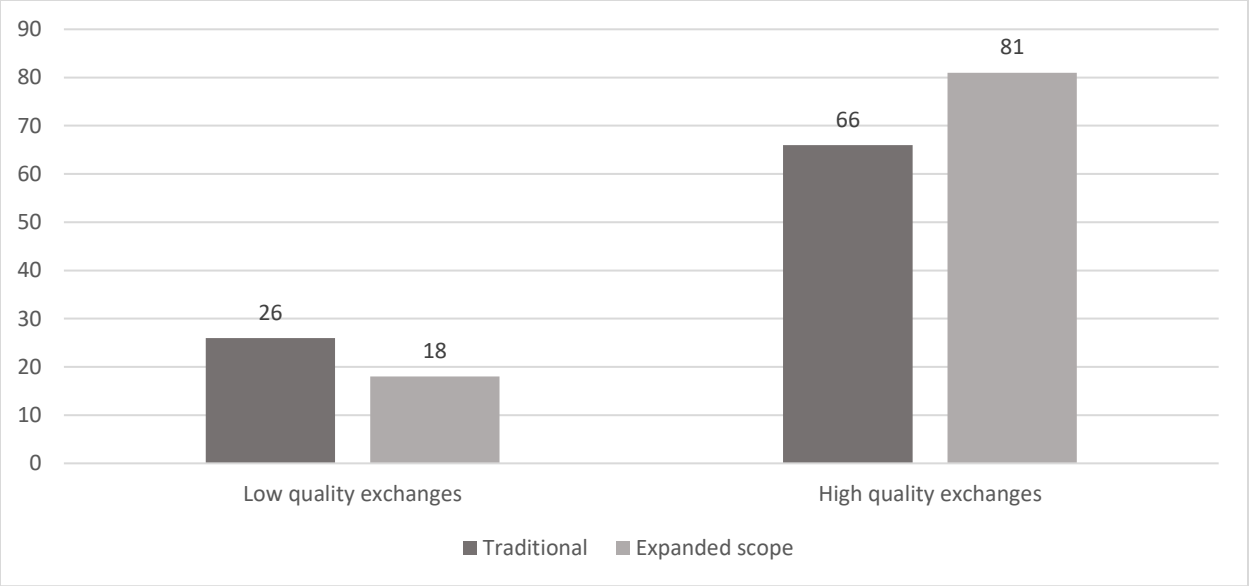


Figure 4.11 Comparison of how many pharmacists ranked quality of the exchanges with physicians regarding traditional versus ESoP activities

As demonstrated in *Figure 4.12* however, when the quality of the exchanges was based on pharmacists' engagement in ESoP activities, pharmacists highly engaged in ESoP activities reported a 56% increase in the quality of exchanges compared to traditional activities. *Figure 4.12* compares the quality of exchanges produced with traditional and ESoP activities, based on the pharmacists' level of engagement in ESoP. Data were broken down into two groups, community pharmacists with low and high ESoP engagement.

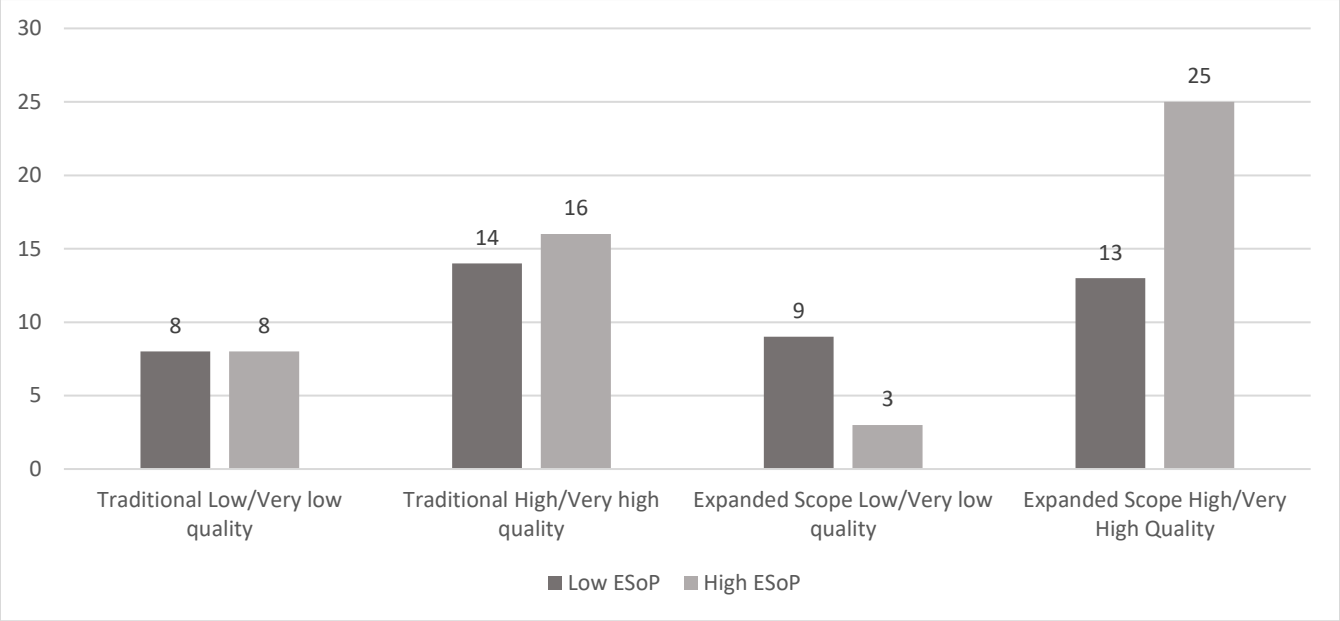


Figure 4.12 Number of pharmacists who rated the quality of exchanges with physicians produced from traditional and ESoP activities, based on low and high levels of pharmacist ESoP engagement

The information presented in *Figure 4.12* suggests when pharmacists are more involved in providing ESoP services to patients, the quality of exchange with physicians is enhanced when compared to providing traditional pharmacy services.

Expanded Scope of Practice Influence on Physician Collaboration

The primary objective of the study was to determine the influence of pharmacists' ESoP on collaboration with physicians. The first way this was assessed in the questionnaire was participants stating whether they strongly agreed, agreed, were neutral, disagreed, or strongly disagreed with eight statements about the possible influence of ESoP on physician collaboration. These statements were derived from the Community Pharmacists Collaboration Model (CPCM) presented in Chapter Two. *Figure 4.13* compares the percentage of pharmacists who disagreed or strongly disagreed versus those who agreed or strongly agreed with each statement.

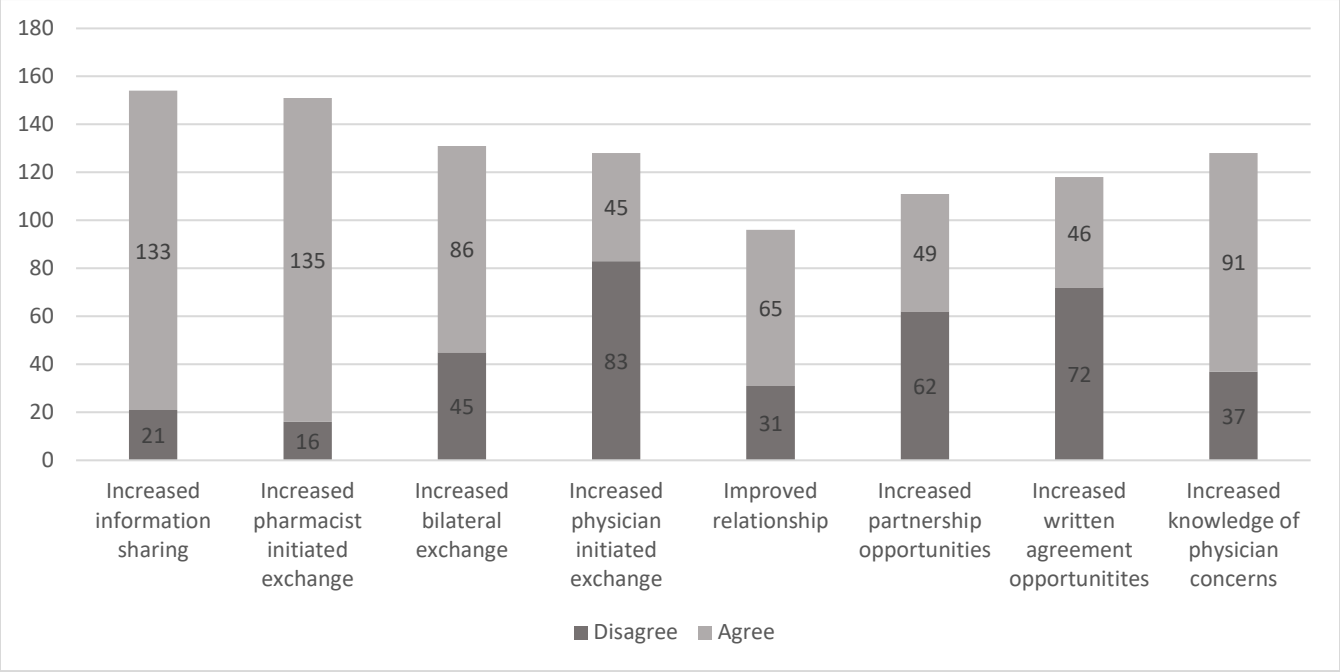


Figure 4.13 Comparison of the number of pharmacists who disagreed versus those who agreed with ESoP's influence

The level of engagement in ESoP activities varied greatly among community pharmacists. *Figure 4.14* and *Figure 4.15* compare the percentage of pharmacists who disagreed versus those who agreed with each of the following statements on ESoP's influence on collaboration. The figures separate responses into two groups: pharmacists who have low engagement in ESoP activities versus pharmacists who have high engagement in ESoP activities.

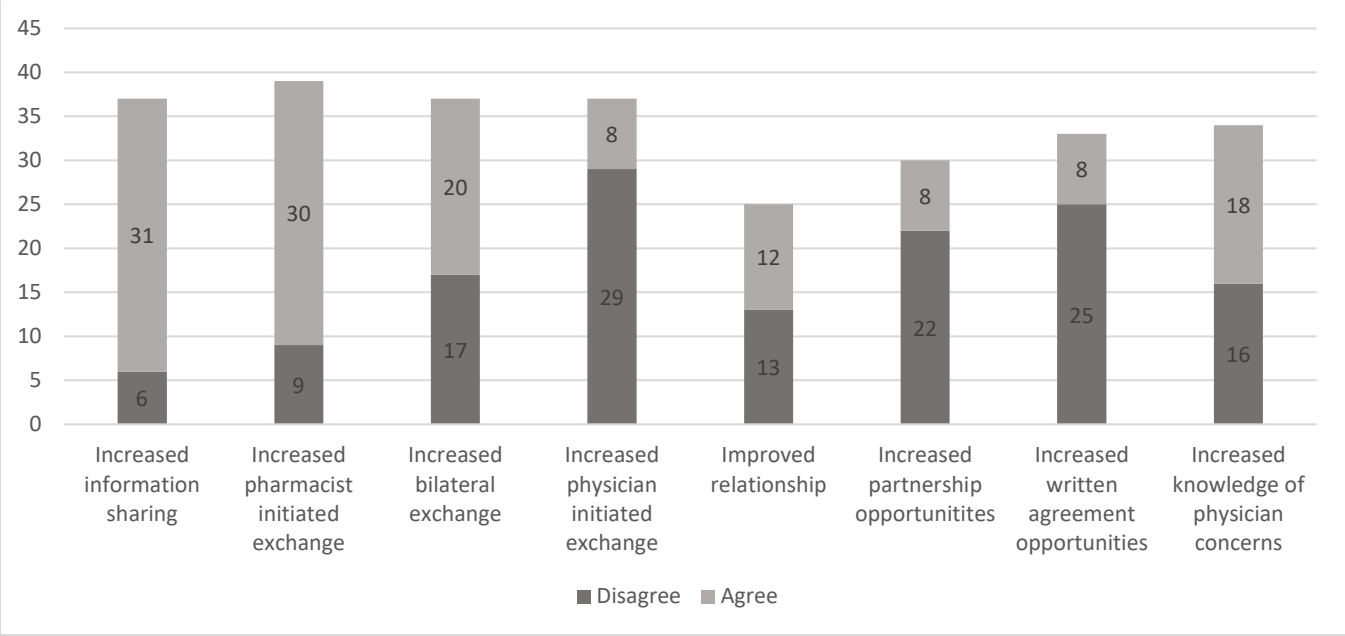


Figure 4.14 Comparison of the number of pharmacists who disagreed versus those who agreed with ESoP's influence from pharmacists with LOW ESoP engagement

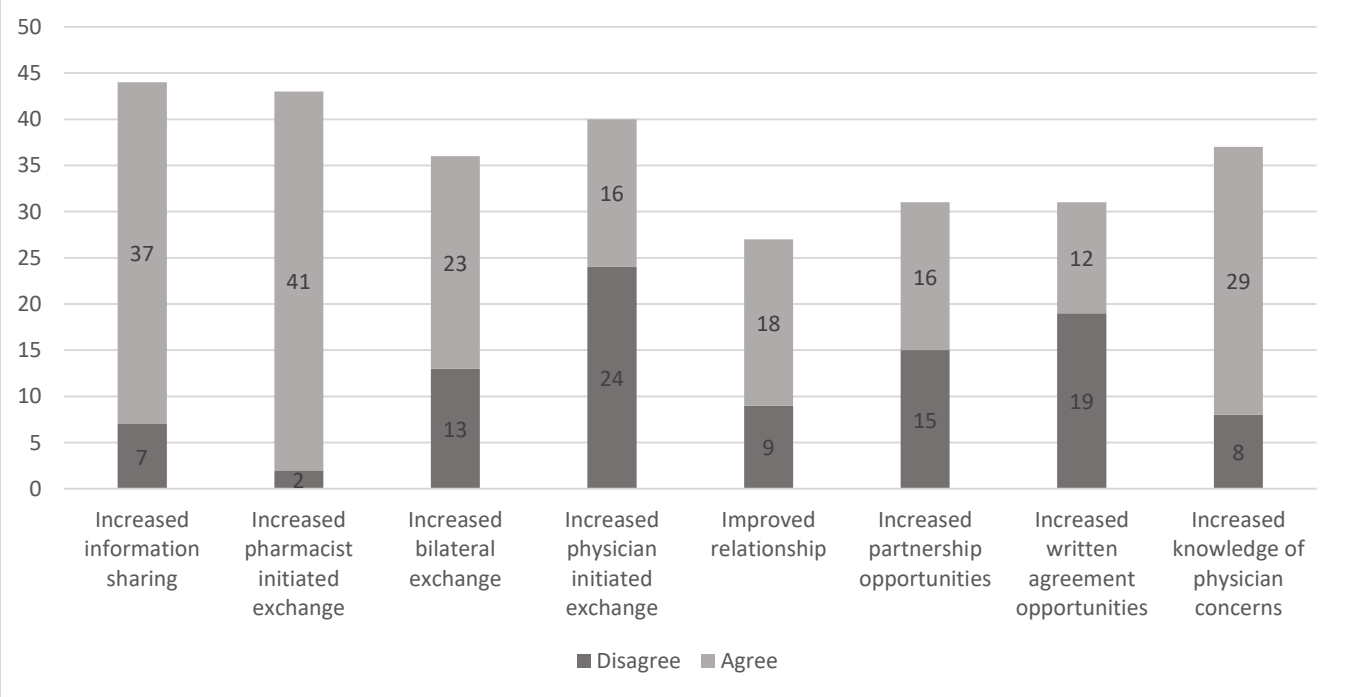


Figure 4.15 Comparison of the number of pharmacists who disagreed versus those who agreed with ESoP's influence from pharmacists with HIGH ESoP engagement

The data was further analyzed to determine if a community pharmacist's level of engagement in

ESoP activities affected their responses on the influence of ESoP. Results show that pharmacists

with high levels of engagement in ESoP activities agree more and disagree less with all eight statements on the influence of ESoP compared to pharmacists with low levels of engagement in ESoP activities. There is a positive correlation between ESoP engagement and the perceived value of ESoP to collaboration with physicians.

An additional method the study used to meet its objectives of determining what influence pharmacists' ESoP had on collaboration with physicians was by asking community pharmacists this question directly via an open-ended prompt. 137 pharmacists responded to the open-ended question and these responses were then coded and recorded based on the frequency of times the theme was identified in the responses. Every time a theme was brought up in a pharmacist's response it received one point. For example, if five pharmacists mentioned in their open-ended response that ESoP improved communication, then it was given a total score of five. However, if the same theme was brought up numerous times in a single pharmacists' response it was still only given a maximum of one point. The overall score was calculated for each subcategory and core category and displayed in the table below.

Table 4.1 *Influence of Expanded Scope of Practice on Physician Collaboration in Community Pharmacy*

Core Category	Sub-category	Total Sub-category Score	Total Core Category Score
Communication	Increased communication	21	35
	Increased sharing of information	14	
Collaboration	Positively affected/Increased	33	33
Pharmacist utilization	Increased physician/clinic use of pharmacist	23	32
	Increased physician/clinic pharmacist referrals	5	
	Increased partnership opportunities (CPA)	4	
Clinical effects	Enhanced shared decision making	19	27
	Improved patient outcomes	8	
Pharmacist – Physician relationship	Increased appreciation and respect	10	23
	Improved relationship with physician	8	
	Enhanced trust	5	
Minimal effect	Little improvement in collaboration with physicians	21	21
Adverse effect on collaboration	Negatively affected collaboration with physicians	16	19
	Increased territorial issues with physicians	3	
Role recognition	Enhanced recognition of pharmacist physician roles		18
Lack of physician engagement	Pharmacist attempts to collaborate with no response from physician	16	16
Varied response from physicians	Response to collaboration depends on the physician. Some are collaborative, some not	14	14
Health systems outcome	Decreased physician workloads	13	13
No influence	Has not resulted in any changes to collaboration with physicians	10	10
Unsure	Not aware of how collaboration has been influenced	2	2

*arranged in order from most frequently mentioned categories to least frequently mentioned

The results from the study indicated the largest influence of pharmacists' ESoP has been enhanced communication and collaboration with physicians. In this question, ESoP activities are grouped into one category. However, they encompass a wide variety of services, some which may be more beneficial than others at fostering collaboration with physicians.

Most Influential ESoP Activities at Fostering Collaboration with Physicians

ESoP activities encompass a large range of pharmacist services. To gauge which activities were more valuable at fostering collaboration, community pharmacists were asked to rank the various ESoP activities as to their overall influence. *Figure 4.16* provides a break down from most to least beneficial activities at fostering collaboration with physicians, as indicated by the pharmacist questionnaire participants.

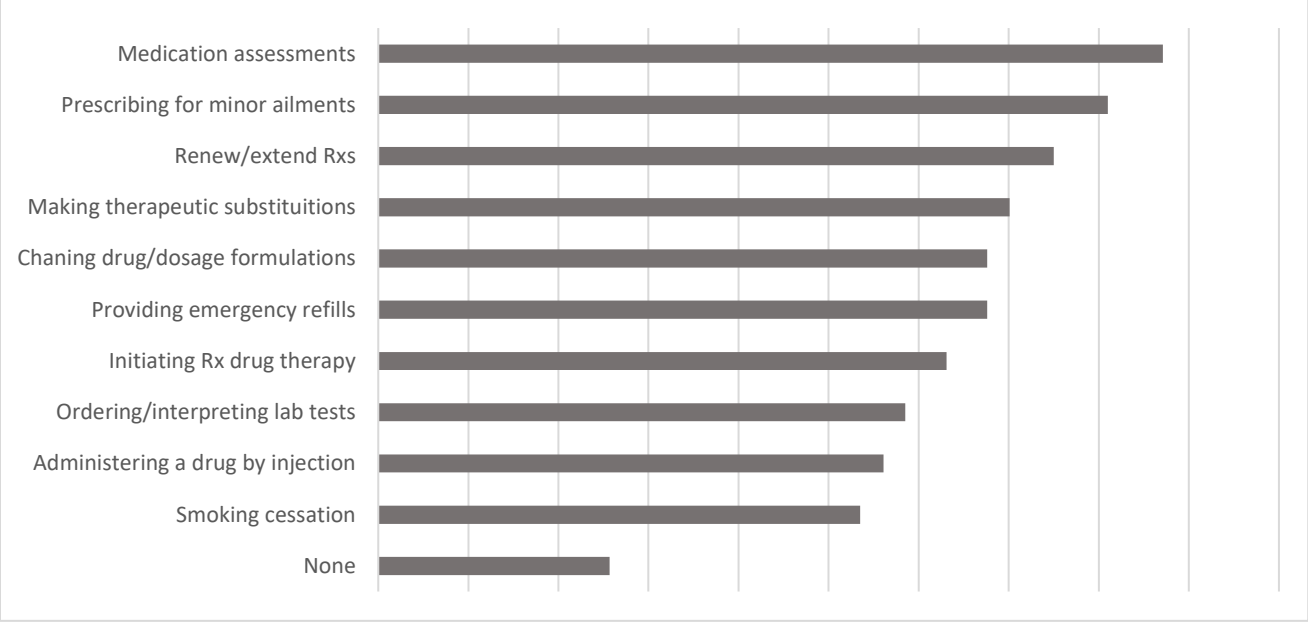


Figure 4.16 Comparison of ESoP activities considered most influential at fostering collaboration with physicians by practicing community pharmacists

Medication assessment was considered the most influential ESoP activity at fostering collaboration, followed by prescribing for minor ailments, and renewing prescriptions.

Strategies for Fostering Collaboration with Physicians

In the questionnaire, pharmacists were asked an open-ended question as to which strategies have had the greatest impact at fostering collaboration with physicians. 136 pharmacists responded to the open-ended question and these responses were then coded into core categories and sub-categories based on common themes presented in the data. Table 4.2 represents the frequency in the occurrence of the following themes that emerged from the responses.

Table 4.2 *Most effective strategies for fostering collaboration with physicians according to practicing community pharmacists*

Core Category	Sub-category	Sub-category Score	Total Category Score
Increasing exchanges	In-person face to face interaction or meeting	27	84
	Phone call/speaking with physician directly	25	
	Written communication/ fax communication	22	
	Written communication via fax followed up with a phone call	5	
	Physician will only accept written communication via fax	5	
Expanded Scope of Practice Activities	Collaboration built off of expanded scope of practice activities. Particularly medication assessments	21	21
Knowledge and skills	Providing physician with strong clear and concise recommendations baked with strong evidence-based medicine and clinical decision making	16	16
Communication	Providing effective clear and open communication		15
Physician Relationship	Getting to know the physician	6	12
	Building trust	4	
	Showing value to physician	2	

Patient-centered care	Collaboration is built by focusing on patient care or patient involvement	8	8
Not sure	Pharmacist not aware of effective strategies to improve collaboration	8	8
Enhanced role recognition	Increasing awareness of pharmacist and physician roles	6	6
Proximity to clinic	Closer proximity to physician or physician clinic improves collaboration	6	6

*arranged in order from most frequently mentioned categories to least frequently mentioned

The most mentioned theme identified in the questionnaire's responses for effective strategies for fostering collaboration with physicians was increasing exchanges used for collaboration. Many pharmacists felt that the choice of medium used for communication with physicians played a significant role in the process. Most pharmacists reported that exchanges which were done in which the medium used was verbal, either via the phone or in-person, were most effective at fostering collaboration with physicians.

Medium of Collaboration

The predominant theme pharmacists identified for fostering collaboration with physicians was by increasing their exchanges with physicians. Most responses included the medium the pharmacists utilized for collaboration. Community pharmacists were asked which medium they primarily used for collaboration with physicians and which was the most effective for collaboration.

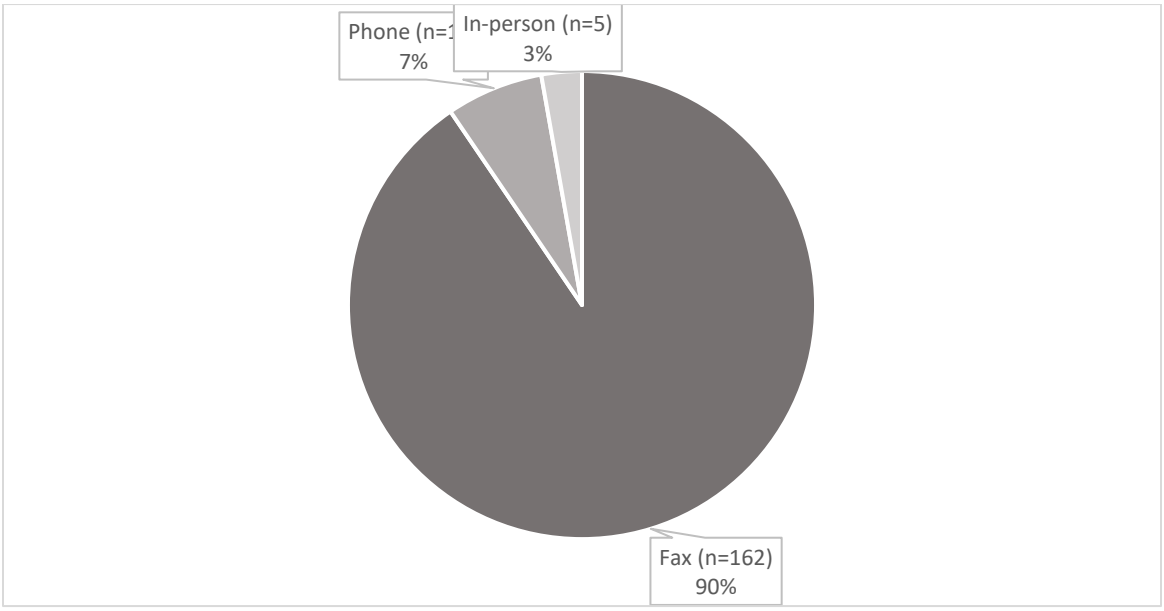


Figure 4.17 Main medium being used for collaboration with physicians (%) currently by practicing community pharmacists

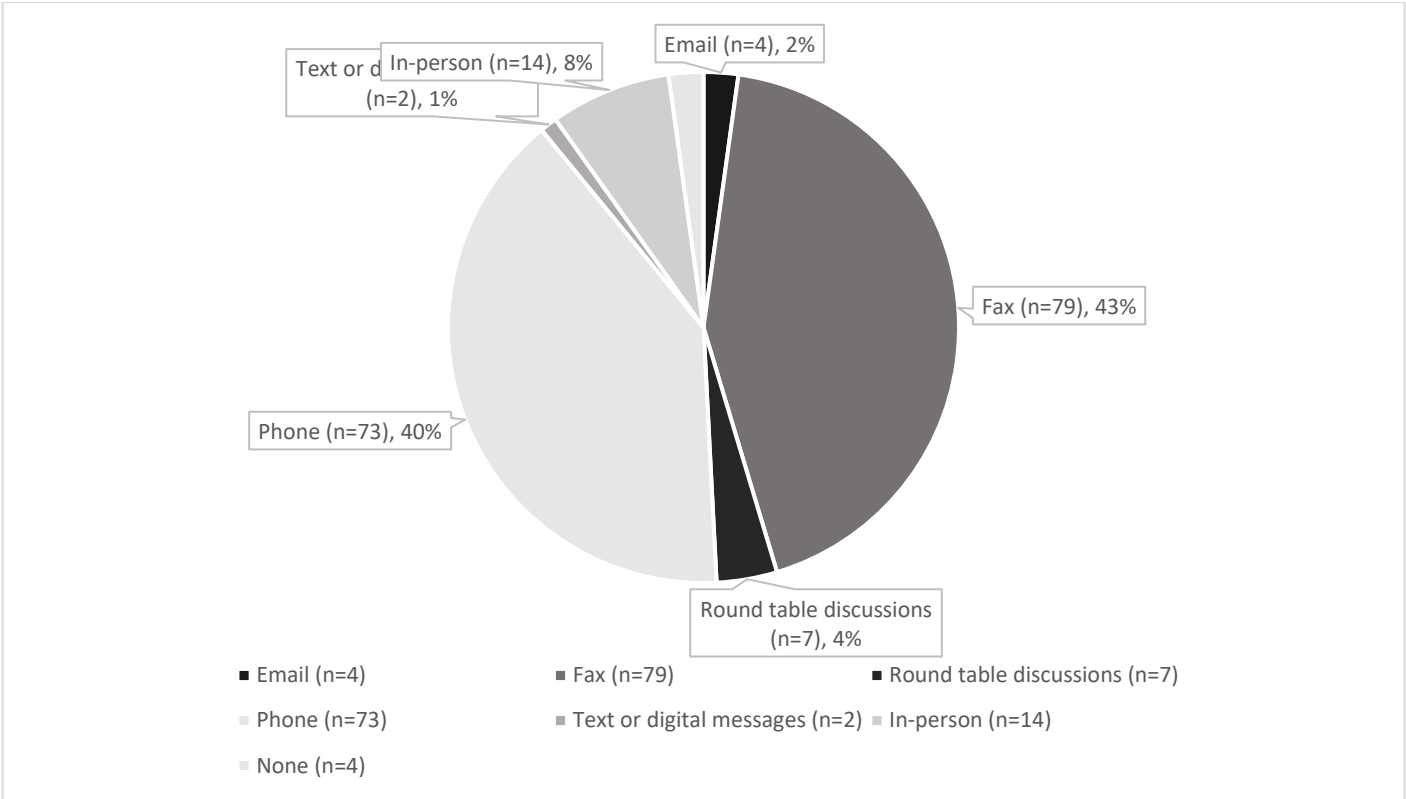


Figure 4.18 Most effective medium for collaboration with physicians (%) as determined by practicing community pharmacists

According to the survey, 90% of pharmacists stated that the main medium they used was fax, followed by seven percent using the phone, and three percent in-person. However, when they were asked which medium was most effective for collaboration, only 43% indicated fax, followed by 40% suggesting phone, 12% stated in person or via round table discussions, and 2% said fax was the most effective means of collaboration.

State of Community Pharmacists' and Physicians' Collaborative Relationship

The last question that was asked on the questionnaire was to categorize the current state of the collaborative relationship with the physician or physician groups with whom they work. Rather than having pharmacists simply state whether they have or do not have a collaborative relationship, I wanted to increase the specificity and determine more specifically what type of collaborative relationship was present by providing seven options of possible collaborative relationships between pharmacists and physicians:

- A CPA (Collaborative Practice Agreement) formalized through SCPP to perform activities or services.
- A written agreement to perform activities or services.
- A verbal agreement to perform activities or services.
- No written or verbal agreement; however, a cooperative relationship in which they work well together on individual patients or tasks consistently.
- Limited collaboration. Communication is one-sided and limited to technical matters related to filling prescriptions.
- No collaboration. As professionals they work independently almost exclusively.
- Hostility, conflict, or opposition when dealing with physicians or physician groups

Figure 4.19 provides the breakdown with how pharmacists view their collaborative relationship with physicians. Then *Figure 4.20* compares the collaborative relationship classification based on the pharmacists' level of engagement in ESoP. Data is broken down into two groups: community pharmacists with low and high ESoP engagement.

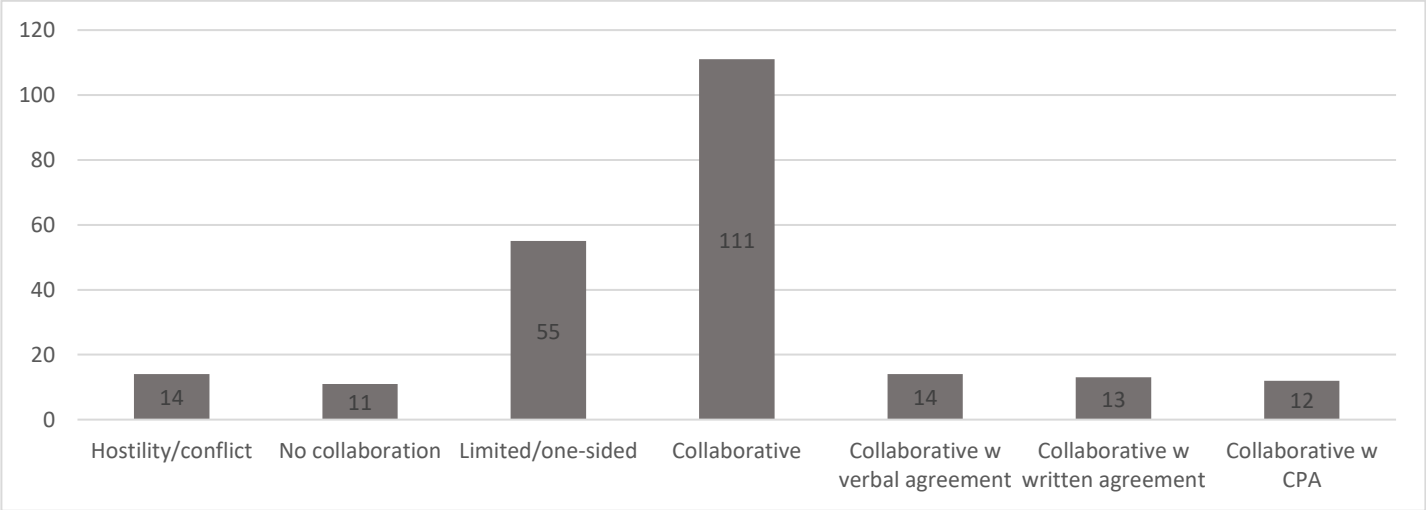


Figure 4.19 Breakdown of how many pharmacists view their collaborative relationship with physicians

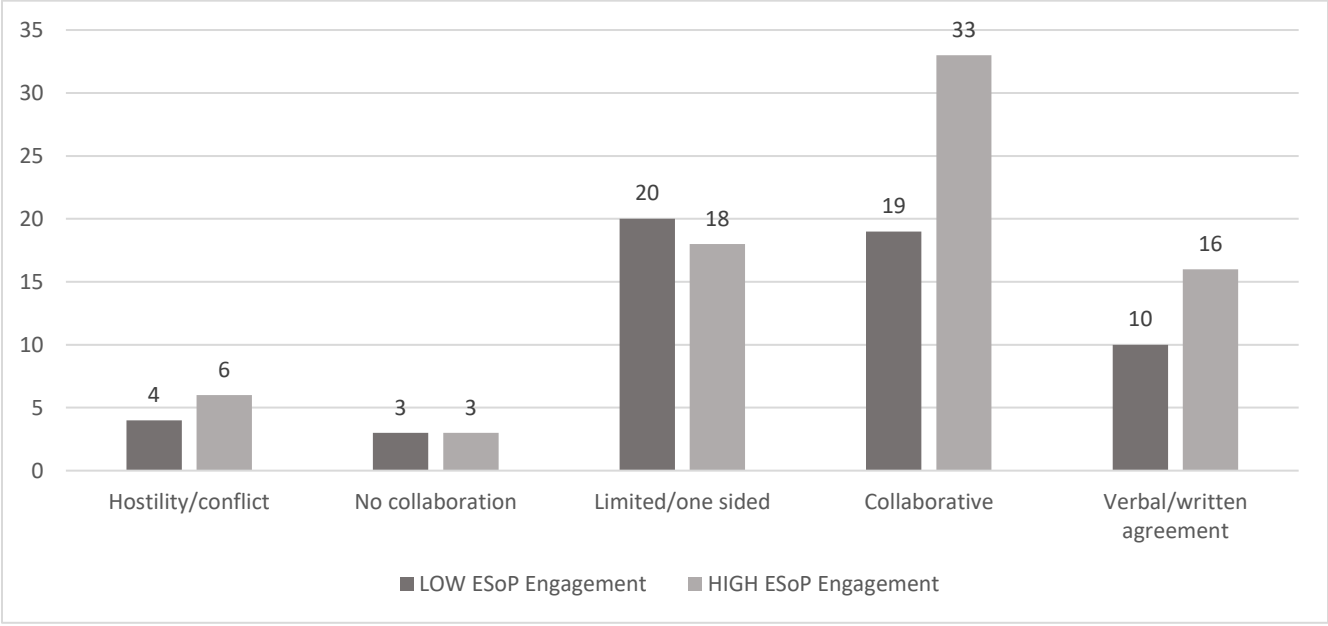


Figure 4.20 Breakdown of how many pharmacists classified their collaborative relationship with physicians based on LOW and HIGH levels of ESoP engagement

Overall, most pharmacists reported a positive collaborative relationship with physicians. There was often no written or verbal agreement; however, the relationship was cooperative with both parties working well together. Very few pharmacists classified their relationship as hostile or void of collaboration altogether. Further, when responses were compared to community pharmacists' level of engagement in ESoP activities, those more highly involved in ESoP viewed their relationship with physicians as more collaborative and containing more verbal partnerships and written agreements

Summary of Demographic Data and Comparisons Amongst Groups

Demographic data was acquired to help paint a picture and give some context to the responses. Given the time and resources available along with taking in consideration the appropriate scope of a Master's thesis, additional variables pertaining to collaboration such as affect of workload, staffing, proximity to physicians clinics. Further inquiry could prove advantageous and assist in acquiring a greater and more in-depth understanding of the study's findings.

Summary Data based on Community Pharmacy Location

The data obtained from the online questionnaire provided a sample of opinions from community pharmacies and practicing pharmacists across the province, including urban and rural settings. The particular category choices for the location of the pharmacy were based on the size of the community and included: large (>100,000 people), medium (30,000-99,999 people), small (5000-29,999 people), and rural (<5000 people) population sizes. Some differences and similarities amoung groups based on pharmacy location are discussed in terms of pharmacist demographics, workload and staffing, ESoP activities, and physician collaboration.

Pharmacist/Pharmacy Demographics

Over half of all pharmacists had worked at least 11 years. There were no large variations between groups in average years of pharmacy experience. Most pharmacists claimed they were staff pharmacists, with the exception of rural pharmacists who indicated they were mostly managers or pharmacy owners. Medium urban area pharmacies reported being most likely to be in or directly beside a physician clinic and rural pharmacies were the least likely.

Workload and Staffing

Medium urban sized pharmacies have the largest daily prescription volume and rural pharmacies have the least. Both large and medium urban sized pharmacies have the most support staff of technicians and assistants. The majority of their technicians are non-registered technicians compared to registered technicians. However, small urban centres report the most registered technicians; additionally, rural centres have the least overall number of registered technicians.

ESoP Activities

The percentage of time of pharmacist workload performing ESoP activities is similar among the groups, ranging between 26- 31%. All locations reported that the most frequently used ESoP were renewing prescriptions, treating minor ailments, and injections. Rural pharmacies report performing more medication assessments, whereas other locations indicate more emergency supplies.

Physician Collaboration

There were some differences in how pharmacists from the various locations classified their collaborative relationship with physicians. Small urban and rural pharmacies classified their

relationship as more collaborative and with the least negativity compared to large and medium sized urban centres. The smaller the centre, the more positive comments that were made regarding the influence of ESoP on physician collaboration. Conversely, the larger the centre, the less positive comments and more negative comments expressed regarding ESoP influence.

All pharmacy locations claimed an improvement in the relationship with physicians because of ESoP; however small urban and rural centres agreed most to its influence. Additionally, small urban and rural pharmacies were more likely to state that ESoP increased partnership opportunities with physicians, unlike medium urban pharmacies who claimed it largely did not. Small urban pharmacies had the most written and verbal partnerships with physicians at 35%. Medium sized urban pharmacies reported no written or verbal partnerships and classified their relationship as primarily collaborative; however pharmacists in these medium sized urban pharmacies reported more of the collaborative activities as being limited in nature. This location was also the only one where medication assessments was not listed as one of the most effective ESoP activities for collaboration with physicians and the only location to rank ESoP as producing less quality interactions compared to traditional pharmacy services.

All pharmacy locations tended to agree more than they disagreed with the statement that ESoP increased pharmacist-lead exchanges, sharing of information, more bilateral exchanges, and greater insight into physicians' goals and objectives. All locations also tended to disagree more than they agreed with the statement that ESoP increased physician-initiated exchanges. The medium used for collaboration was similar between groups, with fax being the primary mechanism. Additionally, all locations considered fax and phone as equally an effective means of collaboration with physicians. To gain more perspective, Table 4.3 summarizes the pharmacists' responses in more detail based on pharmacy location including large, medium, or

small urban settings and rural settings. Pharmacies in remote and “other” locations were excluded from the summary due to a low response rate.

Table 4.3 *Comparison of Questionnaire Results Based on Pharmacy Location*

Question	Large Urban (n=95)	Medium Urban (n=23)	Small Urban (n=46)	Rural (n=49)
Pharmacy proximity to physician clinic	Same building 18% n=17/95 Directly beside 16% n=15/95 Within 2 blocks 42% n=40/95 Same city/town 24% n=23/95 Different town n=0	Same building 35% n=8/23 Directly beside 13% n=3/23 Within 2 blocks 34% n=11/32 Same city/town 47% n=15/32 Different town 3% n=1/32	Same building 9% n=4/46 Directly beside 20% n=9/20 Within 2 blocks 34% n=11/32 Same city/town 47% n=15/32 Different town 3% n=1/32	Same building 2.0% n=1/49 Directly beside 4% n=2/49 Within 2 blocks 34% n=11/32 Same city/town 47% n=15/32 Different town 3% n=1/32
Average # of daily Rxs	<100 14% n=13/95 100-300 56% n=53/95 >300 31% n=29/95	<100 4% n=1/23 100-300 61% n=14/23 >300 35% n=8/23	<100 9% n=4/46 100-300 67% n=31/46 >300 24% n=11/46	<100 29% n=14/49 100-300 67% n=33/49 >300 4% n=2/49
Average Staff	Pharmacists 1-2 58% >3 39% R.tech 1-2 44% >3 1% Tech 1-2 49% >3 15% Assis 1-2 45% >3 41%	Pharmacists 1-2 57% >3 43% R.tech 1-2 47% >3 0% Tech 1-2 45% >3 20% Assis 1-2 47% >3 47%	Pharmacists 1-2 70% >3 30% R.tech 1-2 57% >3 0% Tech 1-2 31%% >11% Assis 1-2 51% >3 36%	Pharmacists 1-2 73% >3 27% R.tech 1-2 19% >3 0% Tech 1-2 42% >3 3% Assis 1-2 73% >3 19%
Years of Pharmacist Experience	< 2y 11% n=10/95 3-10y 35% n=33/95 >11 55% n=52/95	< 2y 13% n=3/23 3-10y 26% n=6/23 >11 61% n=14/23	< 2y 11% n=5/46 3-10y 30% n=14/46 >11 59% n=27/46	< 2y – 12% n=6/49 3-10y – 31% n=15/49 >11 – 57% n=28/49
Position	Staff 69% n=66/95 Clinical 8% n=8/95 Manager 21% n=20/95 Owner 8% n=8/95 Relief 4% n=4/95	Staff 57% n=13/23 Clinical 0% Manager 35% n=8/23 Owner 9% n=2/23 Relief 9% n=2/23	Staff 52% n=24/46 Clinical 7% n=3/46 Manager 33% n=15/46 Owner 11% n=5/46 Relief 13% n=6/46	Staff 49% n=24/49 Clinical 2% n=1/49 Manager 35% n=17/49 Owner 24% n=12/49 Relief 6% n=3/49
Most used expanded scope of practice activities	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Emergency supply	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Emergency supply	1 Renew/extend rxs 2 Minor ailments 3 Injections 3 Emergency supply	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Med Assessments
% of workload in expanded scope of practice activities	29%	31%	31%	26%
Most used medium for collaboration	Fax 94% n=80/85 Phone 5% n=4/85 Other 1% 1/85	Fax 85% n=17/20 Phone 10% n=2/20 Other 5% n=1/20	Fax 86% n=31/36 Phone 8% n=3/36 Other 6% n=2/36	Fax 85% n=34/40 Phone 8% n=3/40 Other 8% n=3/40
Most effective medium for collaboration	Fax 44% n=37/85 Phone 45% n=38/85 DM, email 1% n=1/85 In-person/RT 7% n=6/85	Fax 40% n=8/20 Phone 50% n=10/20 DM, email 0% In-person/RT 10% n=2/20	Fax 36% n=13/36 Phone 36% n=13/36 DM, email 3% n=1/36 In-person/RT 22% n=6/36	Fax 53% n=21/40 Phone 30% n=12/40 DM, email 8% n=3/40 In-person/RT 10% n=4/40

Expanded Scope of Practice Statements **D = Disagree** **A = Agree**	Info sharing D 7% n=6/85 vs A 75% N=64/85 More pharm exch D 8% n=7/85 vs A 78% n=66/85 More bilateral exch D 20% n=17/85 vs A 44% n=37/85 More Dr exchange D 46% n=39/85 vs A 20% n=17/85 Improved relations D 18% n=15/85 vs A 28% n=24/85 More partnership D 36% n=31/85 vs A 20% n=17/85 More written agreem D 38% n=33/85 vs A 21% n=18/85 More Dr info of goals D 22% n=19/85 vs A 44% n=37/85	Info sharing D 10% n=2/20 vs A 65% n=13/20 More pharm exch D 10% n=2/20 vs 65% n=13/20 More bilateral exch D 15% n=3/20 vs A 40% 8/20 More Dr exchange D 40% n=8/20 vs A 15% n=3/20 Improved relations D 20% n=4/20 vs A 35% n=7/20 More partnership D 40% n=8/20 vs A 25% n=5/20 More written agreem D 40% n=4/20 vs A 20% n=4/20 More Dr info of goals D 10% n=2/20 vs A 55% n=11/20	Info sharing D 14% n=5/36 vs A 78% n=28/36 More pharm exch D 8% n=3/36 vs 69% n=25/36 More bilateral exch D 39% n=14/36 vs A 47% n=17/36 More Dr exchange D 50% n=18/36 vs A 31% n=11/36 Improved relations D 17% n=6/36 vs A 44% n=16/36 More partnership D 28% n=10/36 vs A 33% 12/36 More written agreem D 33% n=12/36 vs A 36% n=13/36 More Dr info of goals D 17% n=6/36 vs A 56% n=20/36	Info sharing D 18% n=7/40 vs A 68% n=27/40 More pharm exch D 10% n=4/40 vs 73% n=29/40 More bilateral exch D 25% n=10/40 vs A 58% n=23/40 More Dr exchange D 43% n=17/40 vs A 33% n=13/40 Improved relations D 15% n=6/40 vs A 43% n=17/40 More partnership D 33% n=13/40 vs A 35% n=14/40 More written agreem D 45% n=18/40 vs A 25% n=10/40 More Dr info of goals D 25% n=10/40 vs A 39% n=21/40
Quality of exchange **T = Traditional** **E = Expanded Scope** **L = Low H= High**	T L 11% n=9/85 vs H 38% n=32/85 E L 6% n=5/85 vs H 45% n=38/85	T L 10% n=2/20 vs H 45% n=9/20 E L 10% n=2/20 vs H 35% n=7/20	T L n=10/35 28% vs H 22% n=8/36 E L 8% n=3/35 vs H 46% n=16/35	T L 13% n=5/39 vs H 41% n=16/39 E L 22% n=8/40 vs H 48% n=19/40
Most influential expanded scope at fostering collaboration	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 – Emergency fills	1 – Renew/extend Rxs 2 – Minor ailment 3 – Therapeutic subs 4 – Changing dose	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 – Therapeutic subs	1 – Med assessments 2 – Minor ailment 3 – Therapeutic subs 4 – Renew/extend Rxs
Expanded influence on collaboration	Communication 14/35 Collaboration 15/33 Pharmacist Utilization 7/32 Clinical Effects 11/27 Relationship 11/23 Minimal effect 6/21 Adverse effect 11/19 Role recognition 6/18 Lack of engagement 11/16 Varied response 12/14 Health system outcomes 4/13 No influence 6/10	Communication 4/35 Collaboration 3/33 Pharmacist Utilization 3/32 Clinical Effects 1/27 Relationship 2/23 Minimal effect 5/21 Adverse effect 1/19 Role recognition 2/18 Lack of engagement 1/16 Varied response 0/14 Health system outcomes 1/13 No influence 0/10	Communication 6/35 Collaboration 9/33 Pharmacist Utilization 9/35 Clinical Effects 5/27 Relationship 3/23 Minimal effect 6/21 Adverse effect 2/19 Role recognition 5/18 Lack of engagement 2/16 Varied response 1/14 Health system outcomes 6/13 No influence 3/10	Communication 6/35 Collaboration 5/33 Pharmacist Utilization 5/35 Clinical Effects 8/27 Relationship 5/23 Minimal effect 4/21 Adverse effect 2/19 Role recognition 5/18 Lack of engagement 2/16 Varied response 1/14 Health system outcomes 2/13 No influence 1/10

	Unsure 1/2	Unsure 0/2	Unsure 1/2	Unsure 0/2
Collaborative relationship	CPA/written 9% n=8/85 Partnership 8% n=7/85 Collaborative 60% n=51/85 Limited 34% n=29/85 None 6% n=5/85 Negative 12% n=10/85	CPA/written 0% Partnership 0% Collaborative 60% n=12/20 Limited 50% n=10/20 None 10% n=2/10 Negative 5% n=1/20	CPA/written 29% n=10/36 Partnership 6% n=2/36 Collaborative 58% n=21/36 Limited 28% n=10/36 None 8% n=3/36 Negative 8% n=3/36	CPA/written 13% n=5/40 Partnership 10% n=4/40 Collaborative 68% n=27/40 Limited 15% n=6/40 None 3% n=1/40 Negative 0%

Community pharmacists who participated in the questionnaire were practicing pharmacy in locations all across Saskatchewan, including large, medium, small urban and rural communities. The proportion of pharmacists from each location is representative of the current distribution of all practicing community pharmacists in Saskatchewan, based on data obtained from SCPP. Results between groups were quite similar with no major outliers; however there were some notable differences in some areas. Pharmacists practicing in small urban and rural centres generally had less prescription volume, were comprised of more owners, and had less physical proximity to physician clinics. Small urban centres also had the most registered technicians. Overall pharmacists from small urban and rural pharmacy locations reported having the most favorable opinions about the influence on ESoP on physician collaboration when compared to medium and larger urban centres. Furthermore, pharmacists practicing in small urban and rural centres classified their relationship with physicians as more positive, collaborative, and containing more partnerships and written agreements. The study did not explore or identify the reasons behind the differences in responses between smaller and larger centres but did identify some correlations between the groups that could be researched further. These questions that could be investigated in the future will be explored in a later section.

Summary Data based on Community Pharmacy Proximity to Physician Clinic

Part one of the questionnaire included a question asking pharmacists to state the location of the pharmacy they work in based on its proximity to the physician clinic. Pharmacists were given 5 options to choose from: within the same building as the physician's clinic; Directly beside the physicians clinic, within two blocks of the physicians clinic; In the same town or city as the physicians clinic; or in a different town or city as the physicians clinic. Since only one pharmacist indicated they worked in a different town or city, their results were excluded from analysis. Table 4.4 provides a comparison of the results based on community pharmacy proximity to physician clinic.

Table 4.4 *Comparison of Questionnaire Results Based on Community Pharmacy Proximity to Physician Clinic*

Question	Within the same building (n=31)	Directly beside (n=29)	Within 2 blocks (n=71)	In the same town/city (n=83)
Years of Pharmacist Experience	< 2y 16% n=5/31 3-10y 23% n=7/31 >11 61% n=19/31	< 2y 14% n=4/29 3-10y 38% n=11/29 >11 48% n=14/29	< 2y 10% n=7/71 3-10y 38% n=27/71 >11 52% n=37/71	< 2y 11% n=9/83 3-10y 28% n=23/83 >11 61% n=51/83
Average # of daily Rxs	<100 13% n=4/31 100-300 65% n=20/31 >300 26% n=8/31	<100 7% n=2/29 100-300 31% n=9/29 >300 62% n=18/29	<100 15% n=11/71 100-300 63% n=45/71 >300 15% n=15/71	<100 18% n=15/83 100-300 69% n=57/83 >300 13% n=11/83
Pharmacy Location	Large Urban 55% n=17/31 Medium Urban 26% n=8/31 Small Urban 13% n=4/31 Rural 3% n=1/31	Large Urban 52% n=15/29 Medium Urban 10% n=3/29 Small Urban 31% n=9/29 Rural 7% n=2/29	Large Urban 56% n=40/71 Medium Urban 13% n=9/71 Small Urban 10% n=7/71 Rural 21% n=15/71	Large Urban 28% n=23/83 Medium Urban 4% n=3/83 Small Urban 31% n=26/83 Rural 36% n=30/83
Position	Staff 65% n=20/31 Clinical 10% n=3/31 Manager 26% n=8/31 Owner 16% n=5/31 Relief 3% n=1/31	Staff 59% n=17/29 Clinical 7% n=2/29 Manager 28% n=8/29 Owner 17% n=5/29 Relief 7% n=2/29	Staff 65% n=46/71 Clinical 10% n=7/71 Manager 28% n=20/71 Owner 7% n=5/71 Relief 4% n=3/71	Staff 54% n=45/83 Clinical 1% n=1/83 Manager 29% n=24/83 Owner 13% n=11/83 Relief 11% n=9/83
Most used expanded scope of practice activities	1 Renew/extend rxs 2 Minor ailments 3 Emergency supply 4 Therapeutic sub	1 Renew/extend rxs 2 Minor ailments 3 Emergency supply 4 Injections	1 Renew/extend rxs 2 Minor ailments 3 Injections 3 Med Assessments	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Emergency supply
% of workload in expanded scope of practice activities	28%	33%	30%	29%
Most used medium for collaboration	Fax 82% n=23/28 Phone 7% n=2/28 Other 11% n=3/28	Fax 68% n=15/22 Phone 18% n=4/22 Other 12% n=3/22	Fax 95% n=59/62 Phone 2% n=1/62 Other 3% n=2/62	Fax 91% n=64/70 Phone 7% n=5/70 Other 1% n=1/70
Most effective medium for collaboration	Fax 50% n=14/28 Phone 21% n=6/28 DM, email 4% n=1/28 In-person/RT 25% n=7/28	Fax 23% n=5/22 Phone 50% n=11/22 DM, email 9% n=2/22 In-person/RT 18% n=4/22	Fax 44% n=27/62 Phone 44% n=27/62 DM, email 3% n=2/62 In-person/RT 5% n=3/62	Fax 46% n=32/70 Phone 41% n=29/70 DM, email 1% n=1/70 In-person/RT 5% n=3/70
Expanded Scope of Practice Statements **D = Disagree** **A = Agree**	Info sharing D 14% n=4/28 vs A 79% n=22/28 More pharm exch D 4% n=1/28 vs 86% n=24/28 More bilateral exch	Info sharing D n=0 vs A 91% n=20/22 More pharm exch D 9% n=2/22 vs A 82% n=18/22 More bilateral exch	Info sharing D 18% n=11/62 vs A 63% n=39/62 More pharm exch D 13% n=8/62 vs A 65% n=40/62 More bilateral exch	Info sharing D 10% n=7/70 vs A 73% n=51/70 More pharm exch D 7% n=5/70 vs A 76% n=53/70 More bilateral exch

	D 29% n=8/28 vs A 39% n=11/28 More Dr exchange D 57% n=16/28 vs A 11% n=3/28 Improved relations D 18% n=5/28 vs A 36% n=10/28 More partnership D 36% n=10/28 vs A 25% n=7/28 More written agreem D n36% =10/28 vs A 18% n=5/28 More Dr info of goals D 21% n=6/28 vs A 43% n=12/28	D 23% n=5/22 vs A 64% n=14/22 More Dr exchange D 41% n=9/22 vs A 32% n=7/22 Improved relations D 9% n=2/22 vs A 41% n=9/22 More partnership D 23% n=5/22 vs A 36% n=8/22 More written agreem 23% D n=5/22 vs A 50% n=11/22 More Dr info of goals D 9% n=2/22 vs A 77% n=17/22	D 21% n=13/62 vs A 40% n=25/62 More Dr exchange D 47% n=29/62 vs A 16% n=10/62 Improved relations D 23% n=14/62 vs A 29% n=18/62 More partnership D 44% n=27/62 vs A 16% n=10/62 More written agreem D 45% n=28/62 vs A 15% n=9/62 More Dr info of goals D 27% n=17/62 vs A 48% n=30/62	D 26% n=18/70 vs A 51% n=36/70 More Dr exchange D 40% n=28/70 vs A 33% n=23/70 Improved relations D 10% n=10/70 vs A 40% n=28/70 More partnership D 29% n=20/70 vs A 34% n=24/70 More written agreem D 40% n=28/70 vs A 30% n=21/70 More Dr info of goals D 17% n=12/70 vs A 46% n=32/70
Quality of exchange **T = Traditional** **E = Expanded Scope** **L = Low H= High**	T L 14% n=4/28 vs H 39% n=11/28 E L 11% n=3/27 vs H 48% n=13/27	T L 36% n=8/22 vs H 36% n=8/22 E L 5% n=1/22 vs H 41% n=9/22	T L 10% n=6/62 vs H 42% n=26/62 E L 13% n=8/62 vs H 48% n=30/62	T L 12% n=8/69 vs H 30% n=21/69 E L 9% n=6/70 vs H 40% n=28/70
Most influential expanded scope at fostering collaboration	1 – Renew/extend 2 – Minor ailment 3 – Med assessments 4 – Emergency supply	1 – Med assessments 2 – Minor ailment 3 – Renew/extend 4 – Therapeutic sub	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 – Therapeutic sub	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 – Therapeutic subs
Expanded influence on collaboration	Communication 3/35 Collaboration 5/33 Pharmacist Utilization 5/32 Clinical Effects 3/27 Relationship 3/23 Minimal effect 1/21 Adverse effect 2/19 Role recognition 1/18 Lack of engagement 1/16 Varied response 0/14 Health system outcomes 1/13 No influence 2/10 Unsure 0/2	Communication 7/35 Collaboration 7/33 Pharmacist Utilization 4/32 Clinical Effects 2/27 Relationship 6/23 Minimal effect 0/21 Adverse effect 4/19 Role recognition 3/18 Lack of engagement 2/16 Varied response 5/14 Health system outcomes 3/13 No influence 0/10 Unsure 0/2	Communication 9/35 Collaboration 11/33 Pharmacist Utilization 5/32 Clinical Effects 9/27 Relationship 7/23 Minimal effect 10/21 Adverse effect 7/19 Role recognition 6/18 Lack of engagement 10/16 Varied response 9/14 Health system outcomes 4/13 No influence 5/10 Unsure 0/2	Communication 11/35 Collaboration 10/35 Pharmacist Utilization 11/32 Clinical Effects 11/27 Relationship 5/23 Minimal effect 9/21 Adverse effect 4/19 Role recognition 8/18 Lack of engagement 3/16 Varied response 0/19 Health system outcomes 5/13 No influence 3/10 Unsure 2/2
Collaborative relationship	CPA/written 11% n=3/28 Partnership 7% n=2/28 Collaborative 75% n=21/28	CPA/written 23% n=5/22 Partnership 27% n=6/22 Collaborative 59% n=13/22	CPA/written 8% n=5/62 Partnership 3% n=2/62 Collaborative 55% n=34/62	CPA/written 17% n=12/70 Partnership 6% n=4/70 Collaborative 61% n=43/70

Limited 14% n=4/28	Limited 18% n=4/22	Limited 40% n=25/62	Limited 30% n=21/70
None 4% n=1/28	None n=0	None 10% n=6/62	None 6% n=4/70
Negative 4% n=1/28	Negative 9% n=2/22	Negative 10% n=6/62	Negative 7% n=5/70

Comparing the data obtained from the questionnaire based on how close the pharmacy was in in relation to the physician clinic revealed some interesting details. Although fax was the main medium used when collaborating with physicians by all groups, pharmacies that were in the same building or directly beside physicians groups were 4 to 5 times more likely to utilize verbal communication channels such as in-person communication or communication over the phone. Further they ranked in-person communication higher as an effective medium for collaboration. Pharmacies that were within or directly beside physician's clinics were two-three times more likely to report collaborative relationships with physicians and less and twice as likely to report having a verbal or written partnership. They were also half as likely to report collaboration being limited and reduced to technical matters.

Summary Data based on Community Pharmacy Average Prescription Volume

Table 4.5 *Comparison of Questionnaire Results Based on Daily Average Prescription Volume*

Question	<100 Rx/day (n=32)	100-300 Rx/day (n=131)	300-500 Rx/day (n=35)	Over 500 Rx/day (n=17)
Pharmacy proximity to physician clinic	Same building 9% n=3/32 Directly beside 6% n=2/32 Within 2 blocks 34% n=11/32 Same city/town 47% n=15/32 Different town 3% n=1/32	Same building 15% n=20/131 Directly beside 7% n=9/131 Within 2 blocks 34% n=45/131 Same city/town 44% n=57/131 Different town n=0	Same building 11% n=4/35 Directly beside 29% n=10/35 Within 2 blocks 40% n=14/35 Same city/town 20% n=7/35 Different town n=0/35	Same building 24% n=4/17 Directly beside 47% n=8/17 Within 2 blocks 6% n=1/17 Same city/town 24% n=4/17 Different town n=0
Years of Pharmacist Experience	< 2y 9% n=3/32 3-10y 34% n=11/32 >11 25% n=18/32	< 2y 11% n=14/131 3-10y 29% n=38/131 >11 60% n=79/131	< 2y 14% n=5/35 3-10y 43% n=15/35 >11 43% n=15/35	< 2y 18% n=3/17 3-10y 24% n=4/17 >11 59% n=10/17
Pharmacy Location	Large Urban 41% n=13/32 Medium Urban 3% n=1/32 Small Urban 13% n=4/32 Rural 44% n=14/32	Large Urban 41% n=53/131 Medium Urban 11% n=14/131 Small Urban 24% n=31/131 Rural 25% n=33/131	Large Urban 49% n=17/35 Medium Urban 20% n=7/35 Small Urban 20% n=7/35 Rural 6% n=2/35	Large Urban 71% n=12/17 Medium Urban 6% n=1/17 Small Urban 24% n=4/17 Rural n=0
Position	Staff 50% n=16/32 Clinical 3% n=1/32 Manager 34% n=11/32 Owner 25% n=8/32 Relief 6% n=2/32	Staff 56% n=73/131 Clinical 4% n=5/131 Manager 31% n=40/131 Owner 11% n=15/131 Relief 9% n=12/131	Staff 80% n=28/35 Clinical 9% n=3/35 Manager 11% n=4/35 Owner 6% n=2/35 Relief 3% n=1/35	Staff 71% n=12/17 Clinical 24% n=4/17 Manager 29% n=5/17 Owner 12% n=2/17 Relief n=0
Most used expanded scope of practice activities	1 Renew/extend rxs 2 Minor ailments 3 Emergency supply 4 Injections	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Emergency supply	1 Renew/extend rxs 2 Minor ailments 3 Med Assessments 3 Injections	1 Renew/extend rxs 2 Minor ailments 3 Emergency supply 4 Therapeutic sub
% of workload in expanded scope of practice activities	20%	31%	31%	34%
Most used medium for collaboration	Fax 89% n=25/28 Phone 4% n=1/28 Other 7% n=2/28	Fax 93% n=102/110 Phone 5% n=6/110 Other 2% n=2/110	Fax 74% n=23/31 Phone 13% n=4/31 Other 13% n=4/31	Fax 86% n=12/14 Phone 7% n=1/14 Other 7% n=1/14
Most effective medium for collaboration	Fax 50% n=14/28 Phone 29% n=8/28 DM, email 0 In-person/RT 14% n=4/28 Info sharing	Fax 44% n=48/110 Phone 42% n=46/110 DM, email 2% n=2/110 In-person/RT 5% n=5/110 Info sharing	Fax 32% n=10/31 Phone 48% n=15/31 DM, email 13% n=4/31 In-person/RT 3% n=1/31 Info sharing	Fax 50% n=7/14 Phone 29% n=4/14 DM, email 0% n=0 In-person/RT 21% n=3/14 Info sharing

Expanded Scope of Practice Statements **D = Disagree** **A = Agree**	D 18% n=5/28 vs A 71% n=20/28 More pharm exch D 11% n=3/28 vs 61% n=17/28 More bilateral exch D 18% n=5/28 vs A 50% n=14/28 More Dr exchange D 39% n=11/28 vs A 32% n=9/28 Improved relations D 14% n=4/28 vs A 39% n=11/28 More partnership D 32% n=9/28 vs A 29% n=8/28 More written agreem D 43% n=12/28 vs A 29% n=8/28 More Dr info of goals D 25% n=7/28 vs A 46% n=13/28	D 9% n=10/110 vs A 74% n=81/110 More pharm exch D 5% n=6/110 vs 76% n=84/110 More bilateral exch D 22% n=24/110 vs A 50% n=55/110 More Dr exchange D 42% n=46/110 vs A 25% n=28/110 Improved relations D 16% n=18/110 vs A 35% n=39/110 More partnership D 30% n=33/110 vs A 26% n=29/110 More written agreem D 36% n=40/110 vs A 25% n=28/110 More Dr info of goals D 17% n=19/110 vs A 50% n=55/110	D n=4/31 vs A n=21/31 More pharm exch D 16% n=5/31 vs 74% n=23/31 More bilateral exch D 35% n=11/31 vs A 39% n=12/31 More Dr exchange D 52% n=16/31 vs A 16% n=5/31 Improved relations D 23% n=7/31 vs A 29% n=9/31 More partnership D 55% n=17/31 vs A 23% n=7/31 More written agreem D 58% n=18/31 vs A 19% n=6/31 More Dr info of goals D 29% n=9/31 vs A 55% n=17/31	D 14% n=2/14 vs A 79% n=11/14 More pharm exch D 14% n=2/14 vs 79% n=11/14 More bilateral exch D 36% n=5/14 vs A 36% n=5/14 More Dr exchange D 71% n=10/14 vs A 21% n=3/14 Improved relations D 14% n=2/14 vs A 43% n=6/14 More partnership D 21% n=3/14 vs A 36% n=5/14 More written agreem D 14% n=2/14 vs A 29% n=4/14 More Dr info of goals D 14% n=2/14 vs A n=0
Quality of exchange **T = Traditional** **E = Expanded Scope** **L = Low H= High**	T L 11% n=3/27 vs H 11% n=3/27 E L 25% n=7/28 vs H 25% n=7/28	T L 15% n=16/110 vs H 37% n=41/110 E L 7% n=8/109 vs H 51% n=56/109	T L 10% n=3/31 vs H 52% n=16/31 E L 65% n=2/31 vs H 39% n=12/31	T L 29% n=4/14 vs H 43% n=6/14 E L 7% n=1/14 vs H 43% n=6/14
Most influential expanded scope at fostering collaboration	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 – Emergency fills	1 – Med assessments 2 – Minor ailment 3 – Renew/extend 4 – Therapeutic sub	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 –Initiating Rx	1 – Med assessments 2 – Therapeutic sub 3 – Minor ailments 4 – Changing dosage form
Expanded influence on collaboration	Communication 4/35 Collaboration 4/32 Pharmacist Utilization 2/32 Clinical Effects 5/27 Relationship 4/23 Minimal effect 5/21 Adverse effect 2/19 Role recognition 3/18 Lack of engagement 3/16 Varied response 1/14 Health system outcomes 0/13 No influence 2/10 Unsure 0/2	Communication 20/35 Collaboration 19/32 Pharmacist Utilization 15/32 Clinical Effects 18/27 Relationship 12/23 Minimal effect 10/21 Adverse effect 9/19 Role recognition 8/18 Lack of engagement 9/16 Varied response 8/14 Health system outcomes 11/13 No influence 7/10 Unsure 1/2	Communication 3/35 Collaboration 9/32 Pharmacist Utilization 4/32 Clinical Effects 1/17 Relationship 3/23 Minimal effect 5/21 Adverse effect 3/19 Role recognition 5/18 Lack of engagement 4/16 Varied response 3/14 Health system outcomes 1/13 No influence 1/10 Unsure 0/2	Communication 3/35 Collaboration 1/32 Pharmacist Utilization 4/32 Clinical Effects 1/17 Relationship 2/23 Minimal effect 1/21 Adverse effect 3/19 Role recognition 2/19 Lack of engagement 0/16 Varied response 2/14 Health system outcomes 1/13 No influence 0/10 Unsure 1/2

Collaborative relationship	CPA/written 25% n=7/28 Partnership 4% n=1/28 Collaborative 54% n=15/28 Limited 21% n=6/28 None 11% n=3/28 Negative 7% n=2/28	CPA/written 9% n=10/110 Partnership 7% n=8/110 Collaborative 65% n=72/110 Limited 32% n=35/110 None 6% n=7/110 Negative 7% n=8/110	CPA/written 16% n=5/31 Partnership 6% n=2/31 Collaborative 52% n=16/31 Limited 32% n=10/31 None 0 Negative 10% n=3/31	CPA/written 21% n=3/14 Partnership 21% n=3/14 Collaborative 57% n=8/14 Limited 29% n=4/14 None 7% n=1/14 Negative 7% n=1/14

Prescription workload did not seem to significantly effect pharmacists estimated engagement in ESoP with one exception. Pharmacies doing under 100 prescriptions a day reported approximately 50% less engagement in ESoP activities than larger volume pharmacies. There appeared to be no major differences in the medium used for collaboration or there opinions on exchanges and the frequency or quality of the exchanges. Prescription volume did not seem to affect the number or written or verbal agreement or how pharmacists viewed their collaborative relationship with physicians.

Summary Data based on Pharmacist Experience

Included in the demographic section of part one of the questionnaire was a question asking pharmacists to state their years of experience practicing in community pharmacy. The following chart breaks down the questionnaire responses based on years of experience: two years or less, three to five years, six to ten years, and over 11 years of experience. Table 4.6 provides a portrayal of the results based the range of pharmacists experience practicing in community pharmacy.

Table 4.6 *Comparison of Questionnaire Results Based on Pharmacist Years of Experience Practicing Community Pharmacy*

Question	< 2 years experience (n=25)	3-5 years experience (n=36)	6-10 years experience (n=32)	> 11 years experience (n=107)
Pharmacy proximity to physician clinic	Same building 20% n=5/25 Directly beside 16% n=4/25 Within 2 blocks 28% n=7/25 Same city/town 36% n=9/25 Different town n=0	Same building 11% n=4/36 Directly beside 25% n=9/36 Within 2 blocks 36% n=13/36 Same city/town 28% n=10/36 Different town n=0	Same building 9% n=3/32 Directly beside 6% n=2/32 Within 2 blocks 44% n=14/32 Same city/town 41% n=13/32 Different town n=0	Same building 16% n=19/122 Directly beside 11% n=14/122 Within 2 blocks 30% n=37/122 Same city/town 42% n=51/122 Different town 1% n=1/122
Average # of daily Rxs	<100 12% n=3/25 100-300 56% n=14/25 >300 32% n=8/25	<100 19% n=7/36 100-300 56% n=20/36 >300 25% n=9/36	<100 13% n=4/32 100-300 56% n=18/32 >300 31% n=10/32	<100 15% n=18/122 100-300 65% n=79/122 >300 20% n=25/122
Pharmacy Location	Large Urban 40% n=10/25 Medium Urban 12% n=3/25 Small Urban 20% n=5/25 Rural 24% n=6/25	Large Urban 53% n=19/36 Medium Urban 8% n=3/36 Small Urban 22% n=8/36 Rural 17% n=6/36	Large Urban 44% n=14/32 Medium Urban 9% n=3/32 Small Urban 19% n=6/32 Rural 28% n=9/32	Large Urban 43% n=52/122 Medium Urban 11% n=14/122 Small Urban 22% n=27/122 Rural 23% n=28/122
Position	Staff 80% n=20/25 Clinical 8% n=2/25 Manager 8% n=2 Owner n=0 Relief 16% n=4/25	Staff 69% n=25/36 Clinical 8% n=3/36 Manager 31% n=11/36 Owner 3% n=1/36 Relief 3% n=1/36	Staff 72% n=23/32 Clinical 9% n=3/32 Manager 19% n=6/32 Owner 6% n=2/32 Relief 6% n=2/32	Staff 50% n=61/122 Clinical 4% n=5/122 Manager 34% n=41/122 Owner 20% n=24/122 Relief 7% n=8/122
Most used expanded scope of practice activities	1 Renew/extend rxs 2 Minor ailments 3 Emergency supply 4 Injections	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Emergency supply	1 Renew/extend rxs 2 Minor ailments 3 Injections 3 Med Assessments	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Emergency supply
% of workload in expanded scope of practice activities	30%	31%	29%	29%
Most used medium for collaboration	Fax 79% n=15/19 Phone 10.5% n=2/19 Other 10.5% n=2/19	Fax 94% n=29/31 Phone 3% n=1/31 Other 3% n=1/31	Fax 85% n=22/26 Phone 12% n=3/26 Other 3% n=1/26	Fax 90% n=96/107 Phone 6% n=6/107 Other 4% n=5/107
Most effective medium for collaboration	Fax 32% n=6/19 Phone 53% n=10/19 DM, email 0 In-person/RT 10% n=2/19	Fax 19% n=6/31 Phone 61% n=19/31 DM, email 0 In-person/RT 20% n=6/31	Fax 35% n=9/26 Phone 46% n=12/26 DM, email 7% n=2/26 In-person/RT 12% n=3/26	Fax 54% n=58/107 Phone 30% n=32/107 DM, email 4% n=4/107

				In-person/RT 10% n=10/107
Expanded Scope of Practice Statements **D = Disagree** **A = Agree**	Info sharing D 11% n=2/19 vs A 74% n=14/19 More pharm exch D16% n=3/19 vs 79% n=15/19 More bilateral exch D 32% n=6/19 vs A 37% n=7/19 More Dr exchange D 58% n=11/19 vs A 26% n=5/19 Improved relations D 16% n=3/19 vs A 26% n=5/19 More partnership D 21% n=4/19 vs A 37% n=7/19 More written agreem D 42% n=8/19 vs A 32% n=6/19 More Dr info of goals D 16% n=3/19 vs A 58% n=11/19	Info sharing D n=2/31 vs A n=26/31 More pharm exch D 3% n=1/31 vs A 84% n=26/31 More bilateral exch D 32% n=10/31 vs A 45% n=14/31 More Dr exchange D 42% n=13/31 vs A 23% n=7/31 Improved relations D 13% n=4/31 vs A 29% n=9/31 More partnership D 29% n=9/31 vs A 19% n=6/31 More written agreem D 35% n=11/31 vs A 39% n=12/31 More Dr info of goals D 26% n=8/31 vs A 52% n=16/31	Info sharing D 12% n=3/26 vs A 81% n=21/26 More pharm exch D 4% n=1/26 vs a 81% n=21/26 More bilateral exch D 19% n=5/26 vs A 62% n=16/26 More Dr exchange D 50% n=13/26 vs A 42% n=11/26 Improved relations D 12% n=3/26 vs A 54% n=14/26 More partnership D 42% n=11/26 vs A 38% n=10/26 More written agreem D 38% n=10/26 vs A 27% n=7/26 More Dr info of goals D 23% n=6/26 vs A 46% n=12/26	Info sharing D 13%n=14/107 vs A 67% n=72/107 More pharm exch D 10% n=11/107 vs 68% n=73/107 More bilateral exch D 22% n=24/107 vs A 46% n=49/107 More Dr exchange D 43% n=46/107 vs A 21% n=22/107 Improved relations D 20% n=21/107 vs A 35% n=37/107 More partnership D 36% n=38/107 vs A 24% n=26/107 More written agreem D 40% n=43/107 vs A 20% n=21/107 More Dr info of goals D 19% n=20/107 vs A 49% n=52/107
Quality of exchange **T = Traditional** **E = Expanded Scope** **L = Low H= High**	T L 16% n=3/19 vs H 21% n=4/19 E L 11% n=2/19 vs H 21% n=4/19	T L 16% n=5/31 vs H 32% n=10/31 E L 10% n=3/31 vs H 35% n=11/31	T L 19% n=5/26 vs H 46% n=12/26 E L 4% n=1/26 vs H 54% n=14/26	T L 11% n=13/106 vs H 38% n=40/106 E L 11% n=12/106 vs H 49% n=52/106
Most influential expanded scope at fostering collaboration	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 – Emergency fills	1 – Med assessments 2 – Minor ailment 3 – Renew/extend 4 – Initiating Rx	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 – Emergency fills	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 – Therapeutic subs

Expanded influence on collaboration	Communication 4/35 Collaboration 4/33 Pharmacist Utilization 2/32 Clinical Effects 2/27 Relationship 2/23 Minimal effect 1/21 Adverse effect 3/19 Role recognition 0/18 Lack of engagement 5/16 Varied response 4/14 Health system outcomes 1/13 No influence 1/10 Unsure 0/2	Communication 7/35 Collaboration 8/33 Pharmacist Utilization 4/32 Clinical Effects 4/27 Relationship 6/23 Minimal effect 4/21 Adverse effect 5/19 Role recognition 2/18 Lack of engagement 5/16 Varied response 3/14 Health system outcomes 2/13 No influence 1/10 Unsure 0/2	Communication 3/35 Collaboration 7/33 Pharmacist Utilization 6/32 Clinical Effects 5/27 Relationship 1/23 Minimal effect 6/21 Adverse effect 0/19 Role recognition 6/18 Lack of engagement 1/16 Varied response 1/14 Health system outcomes 1/13 No influence 0/10 Unsure 0/2	Communication 16/35 Collaboration 14/33 Pharmacist Utilization 13/32 Clinical Effects 14/27 Relationship 12/23 Minimal effect 10/21 Adverse effect 9/19 Role recognition 10/18 Lack of engagement 5/16 Varied response 6/14 Health system outcomes 9/13 No influence 8/10 Unsure 2/2
Collaborative relationship	CPA/written 5% n=1/19 Partnership 11% n=2/19 Collaborative 74% n=14/19 Limited 47% n=9/19 None 0 Negative 11% n=2/19	CPA/written 19% n=6/31 Partnership 13% n=4/31 Collaborative 48% n=15/31 Limited 42% n=13/31 None 3% n=1/31 Negative 16% n=5/31	CPA/written 4% n=1/26 Partnership 12% n=3/26 Collaborative 81% n=21/26 Limited 15% n=4/26 None 0 Negative 0	CPA/written 16% n=17/107 Partnership 5% n=5/107 Collaborative 57% n=61/107 Limited 27% n=29/107 None 9% n=10/107 Negative 7% n=7/107

The majority of the data obtained after separating pharmacists based on practice experience in the community was similar including their degree of engagement in ESoP activities. However there were a few notable differences in pharmacists' responses for those who had more than 11 years of experience. Based on the data 57% of all responses to part one of the questionnaire were completed by pharmacists who had 11 years or more of experience practicing as a community pharmacist. Approximately a third of these were from pharmacists who had 11-20 years of experience and two-thirds had over 20 years of experience. Out of the 60 pharmacists who selected they were in a manager position, 42 or 68% of them had over 11 years of experience. Furthermore pharmacists in this group were the only group who indicated that fax was the more influential medium over verbal communication mediums such as the phone. Out of

the 25 pharmacists who stated they had a written or collaborative practice agreement, 17 or 68% of those had over 11 years of pharmacy practice experience. 10 out of 11 of the pharmacists who stated that there was no collaboration between pharmacists and physicians were also pharmacists who practiced more than 11 years.

Summary Data based on Pharmacist Position

In part one of the questionnaire obtaining demographic information, pharmacists were asked to state their position working at the pharmacy. Pharmacists were given 5 options to choose from: floater/relief pharmacist, a staff pharmacist, a clinical pharmacist, a pharmacy manager, and a pharmacy owner. Table 4.7 provides a comparison of the results based on community pharmacists' position working in the pharmacy. The table combines results for pharmacists who indicated they were managers and owners.

Table 4.7 *Comparison of Questionnaire Results Based on Pharmacist Position*

Question	Floater/relief pharmacist (n=15)	Staff pharmacist (n=129)	Clinical pharmacist (n=13)	Pharmacy manager/owner (n=78)
Pharmacy proximity to physician clinic	Same building 7% n=1/15 Directly beside 13% n=2/15 Within 2 blocks 20% n=3/15 Same city/town 60% n=9/15 Different town n=0	Same building 16% n=20/129 Directly beside 13% n=17/129 Within 2 blocks 36% n=46/129 Same city/town 35% n=45/129 Different town 1% n=1/129	Same building 23% n=3/13 Directly beside 15% n=2/13 Within 2 blocks 54% n=7/13 Same city/town 8% n=1/13 Different town n=0	Same building 15% n=12/78 14% Directly beside n=11/78 Within 2 blocks 28% n=22/78 Same city/town 41% n=32/78 Different town 1% n=1/78
Average # of daily Rxs	<100 13% n=2/15 100-300 80% n=12/15 >300 7% n=1/15	<100 12% n=16/129 100-300 57% n=73/129 >300 31% n=40/129	<100 8% n=1/13 100-300 38% n=5/13 >300 54%n=7/13	<100 21% n=16/78 100-300 64% n=50/78 >300 15% n=12/78
Pharmacy Location	Large Urban 26% n=4/15 Medium Urban 13% n=2/15 Small Urban 40% n=6/15 Rural 20% n=3/15	Large Urban 51% n=66/129 Medium Urban 10% n=13/129 Small Urban 19% n=24/129 Rural 19% n=24/129	Large Urban 67% n=8/12 Medium Urban n=0 Small Urban 25% n=3/12 Rural 8% n=1/12 Other 8% n=1/12	Large Urban 32% n=25/78 Medium Urban 13% n=10/78 Small Urban 23% n=18/78 Rural 32% n=25/78
Years of Pharmacist Experience	< 2y 27% n=4/15 3-10y 20% n=3/15 >11 53% n=8/15	< 2y 16% n=20/129 3-10y 37% n=48/129 >11 47% n=61/129	< 2y 15% n=2/13 3-10y 46% n=6/13 >11 38% n=5/13	< 2y3% n=2/78 3-10y 23% n=18/78 >11 74% n=58/78
Most used expanded scope of practice activities	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Emergency supply	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Emergency supply	1 Renew/extend rxs 2 Minor ailments 3 Med Assessments 4 Injections	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Med assessments
% of workload in expanded scope of practice activities	31%	31%	43%	28%
Most used medium for collaboration	Fax 91% n=10/11 Phone 9% n=1/11 Other 0% n=0	Fax 87% n=97/112 Phone 8% n=9/112 Other 5% n=6/112	Fax 83% n=10/12 Phone 8% n=1/12 Other 8% n=1/12	Fax 93% n=62/67 Phone 3% n=2/67 Other 4% n=3/67
Most effective medium for collaboration	Fax 55% n=6/11 Phone 18% n=2/11 DM, email 9% n=1/11 In-person/RT 9% n=1/11	Fax 55% n=6/112 Phone 18% n=2/112 DM, email 0 In-person/RT 9% n=1/112	Fax 42% n=5/12 Phone 33% n=4/12 DM, email 16% n=2/12 In-person/RT 8% n=1/12	Fax 48% n=32/67 Phone 33% n=22/67 DM, email 1% n=1/67 In-person/RT 12% n=8/67
	Info sharing	Info sharing	Info sharing	Info sharing

Expanded Scope of Practice Statements **D = Disagree** **A = Agree**	D n=0 vs A 82% n=9/11 More pharm exch D n=0/11 vs A 55% n=6/11 More bilateral exch D 9% n=1/11 vs A 45% n=5/11 More Dr exchange D 36% n=4/11 vs A 18% n=2/11 Improved relations D 9% n=1/11 vs A 45% n=5/11 More partnership D 18% n=2/11 vs A 18% n=2/11 More written agreem D 27% n=3/11 vs A 18% n=2/11 More Dr info of goals D 9% n=1/11 vs A 91% n=10/11	D 13% n=15/112 vs A 71% n=80/112 More pharm exch D 13% n=15/112 vs 71% n=80/112 More bilateral exch D 29% n=32/112 vs A 42% n=47/112 More Dr exchange D 50% n=56/112 vs A 23% n=26/112 Improved relations D 21% n=24/112 vs A 31% n=35/112 More partnership D 36% n=40/112 vs A 29% n=32/112 More written agreem D 42% n=47/112 vs A 29% n=33/112 More Dr info of goals D 21% n=24/112 vs A 53% n=59/112	D 8% n=1/12 vs A 83% n=10/12 More pharm exch D n=0 vs 92% n=11/12 More bilateral exch D 25% n=3/12 vs A 58% n=7/12 More Dr exchange D 58% n=7/12 vs A 33% n=4/12 Improved relations D 17% n=2/12 vs A 50% n=6/12 More partnership D 50% n=6/12 vs A 33% n=4/12 More written agreem D 33% n=4/12 vs A 33% n=4/12 More Dr info of goals D 25% n=3/12 vs A 58% n=7/12	D 11% n=8/74 vs A 66% n=49/74 More pharm exch D 3% n=2/74 vs 72% n=53/74 More bilateral exch D 20% n=15/74 vs A 49% n=36/74 More Dr exchange D 36% n=27/74 vs A 24% n=18/74 Improved relations D 9% n=7/74 vs A 36% n=27/74 More partnership D 32% n=24/74 vs A 20% n=15/74 More written agreem D 35% n=26/74 vs A 19% n=14/74 More Dr info of goals D 16% n=12/74 vs A 46% n=34/74
Quality of exchange **T = Traditional** **E = Expanded Scope** **L = Low H= High**	T L 9% n=1/11 vs H 18% n=2/11 E L n=0 vs 45% H n=5/11	T L 14% n=15/111 vs H 39% n=43/111 E L 7% n=8/112 vs H 43% n=48/112	T L 25% n=3/12 vs H 33% n=4/12 E L 17% n=2/12 vs H 67% n=8/12	T L 20% n=15/74 vs H 27% n=20/74 E L 15% n=11/73 vs H 48% n=35/73
Most influential expanded scope at fostering collaboration	1 – Med assessments 2 – Minor ailment 3 – Smoking cessation 4 – Ordering labs	1 – Med assessments 2 – Minor ailment 3 – Renew/extend 4 – Initiating Rx	1 – Med assessments 2 – Renewing/extend rxs 3 – Emergency supply 4 – Minor ailments	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 – Emergency supply
Expanded influence on collaboration	Communication 1/35 Collaboration 3/33 Pharmacist Utilization 1/32 Clinical Effects 0/27 Relationship 3/23 Minimal effect 1/21 Adverse effect 1/19 Role recognition 0/18 Lack of engagement 2/16 Varied response 1/14 Health system outcomes 1/13 No influence 1/10 Unsure 1/2	Communication 12/35 Collaboration 19/33 Pharmacist Utilization 16/32 Clinical Effects 15/27 Relationship 12/23 Minimal effect 14/21 Adverse effect 13/19 Role recognition 11/18 Lack of engagement 9/16 Varied response 12/14 Health system outcomes 8/13 No influence 6/10 Unsure 1/2	Communication 2/35 Collaboration 5/33 Pharmacist Utilization 3/32 Clinical Effects 3/27 Relationship 2/23 Minimal effect 1/21 Adverse effect 2/19 Role recognition 3/18 Lack of engagement 0/16 Varied response 1/14 Health system outcomes 2/13 No influence 1/10 Unsure 0/2	Communication 17/35 Collaboration 12/33 Pharmacist Utilization 9/32 Clinical Effects 11/27 Relationship 8/23 Minimal effect 9/21 Adverse effect 5/19 Role recognition 6/18 Lack of engagement 5/16 Varied response 2/14 Health system outcomes 5/13 No influence 3/10 Unsure 0/2

Collaborative relationship	CPA/written n=0 Partnership n=0 Collaborative 57% n=8/14 Limited 36% n=5/14 None n=0 Negative 7% n=1/14	CPA/written 11% n=16/150 Partnership 5% n=7/150 Collaborative 47% n=70/150 Limited 25% n=38/150 None 5% n=7/150 Negative 8% n=12/150	CPA/written 24% n=5/21 Partnership 10% n=2/21 Collaborative 43% n=9/21 Limited 14% n=3/21 None 5% n=1/21 Negative 5% n=1/21	CPA/written 13% n=10/79 Partnership 10% n=8/79 Collaborative 48% n=38/79 Limited 20% n=16/79 None 6% n=5/79 Negative 3% n=2/79

When the questionnaire data was separated based on what position pharmacists held in the pharmacy, the following results were noted. Engagement in ESoP activities was almost 50% higher for pharmacists who were classified clinical pharmacists. Further, clinical pharmacists were twice as likely to report having a verbal or written agreement with physicians. Conversely, pharmacists who stated their position was a floater or relief pharmacists reported no verbal or written agreements with physicians. There were no significant differences in the medium clinical pharmacists used or those considered most effective for communication with other groups. There were also no major differences in their exchanges with physicians or the quality of those exchanges.

Further inquiry into understanding the type of pharmacies study participants were from included a question on general pharmacy staffing during a typical shift. Pharmacists were asked to estimate their average staffing of pharmacists, registered technicians, non-registered technicians and other support staff in a typical workday. The following tables compares the data obtained separated by registered technician status and pharmacist quantity.

Table 4.8 *Comparison of Questionnaire Results Based on Number of Registered Technician Per Shift*

Question	0 Registered Technicians (n=79)	1 Registered Technicians (n=54)	2 or more Registered Technicians (n=16)
Pharmacy proximity to physician clinic	Same building 16% n=14/90 Directly beside 14% n=13/90 Within 2 blocks 33% n=30/90 Same city/town 36% n=32/90 Different town 1% n=1	Same building 11% n=6/54 Directly beside 20% n=11/54 Within 2 blocks 39% n=21/54 Same city/town 30% n=16/54 Different town 0% n=0	Same building 19% n=3/16 Directly beside 13% n=2/16 Within 2 blocks 25% n=4/16 Same city/town 44% n=7/16 Different town 0% n=0
Average # of daily Rxs	<100 21% n=19 100-300 62% n=56 >300 17% n=15	<100 0% n=0 100-300 56% n=30/54 >300 44% n=24/54	<100 n=0 100-300 44% n=7/16 >300 56% n=n=9/16
Pharmacy Location	Large Urban 48% n=43/90 Medium Urban 10% n=9/90 Small Urban n=18% Rural 23% n=21/90	Large Urban 46% n=25/54 Medium Urban 15% n=8/54 Small Urban 33% n=18/54 Rural 6% n=3/54	Large Urban 63% n=10/16 Medium Urban 0 n=0% Small Urban 19% n=3/16 Rural 13% n=2/16
Years of Pharmacist Experience	< 2y 16% n=14 3-10y 26% n=23 >11 59% n=53	< 2y 11% n=6/54 3-10y 41% n=22/54 >11 48% n=24/54	< 2y n=0 3-10y 44% n=7/16 >11 56% n=9/16
Position	Staff 32% n=25/79 Clinical 4% n=3/79 Manager 14% n=11/79 Owner 1% n=1/79 Relief 1% n=1/79	Staff 67% n=36/54 Clinical 11% n=6/54 Manager 20% n=11/54 Owner 4% n=2/54 Relief 9% n=5/54	Staff 56% n=9/16 Clinical 13% n=2/16 Manager 19% n=3/16 Owner 19% n=3/16 Relief 13% n=2/16
Most used expanded scope of practice activities	1 Renew/extend rxs 2 Minor ailments 3 Emergency supply 4 Injections	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Med Assessments	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Emergency supply
% of workload in expanded scope of practice activities	29%	32%	36%
Most used medium for collaboration	Fax 89% n=70/79 Phone 5% n=4/79 Other 6% n=5/79	Fax 87% n=40/46 Phone 9% n=4/60 Other 4% n=2/46	Fax 87% n=13/15 Phone 7% n=1/15 Other 7% n=1/15
Most effective medium for collaboration	Fax 43% n=32/79 Phone 41% n=32/79 DM, email 3% n=2/79 In-person/RT 10% n=3/79	Fax 43% n=20/46 Phone 39% n=18/46 DM, email 2% n=1/46 In-person/RT 7% n=3/46	Fax 47% n=7/15 Phone 40% n=6/15 DM, email 13% n=2/15 In-person/RT % n=0
Expanded Scope of Practice Statements **D = Disagree** **A = Agree**	Info sharing D 14% n=11/79 vs A 67% n=53/79 More pharm exch	Info sharing D 11% n=5/46 vs A 78% n=36/46 More pharm exch D 7% n=3/46 vs A 76% n=35/46 More bilateral exch	Info sharing D n=0 vs A 100% n=15/15 More pharm exch D n=0 vs n=100% More bilateral exch

	D 11% n=11/79 vs A 67% n=53/79 More bilateral exch D 22% n=17/79 vs A 48% n=38/79 More Dr exchange D 46% n=36/79 vs A 18% n=14/79 Improved relations D 16% n=13/79 vs A 29% n=23/79 More partnership D 33% n=26/79 vs A 25% n=20/79 More written agreem D 42% n=33/79 vs A 24% n=19/79 More Dr info of goals D 14% n=11/79 vs A 58% n=46/79	D 28% n=13/46 vs A 43% n=20/46 More Dr exchange D 43% n=20/46 vs A 33% n=15/46 Improved relations D 20% n=9/46 vs A 30% n=14/46 More partnership D 30% n=14/46 vs A 31% n=14/46 More written agreem D 30% n=14/46 vs A 24% n=11/46 More Dr info of goals D 24% n=11/46 vs A 46% n=21/46	D 20% n=3/15 vs A 60% n=9/15 More Dr exchange D 40% n=6/15 vs A 33% n=5/15 Improved relations D 7% n=1/15 vs A 60% n=9/15 More partnership D 33% n=5/15 vs A 27% n=4/15 More written agreem D 33% n=5/15 vs A 20% n=3/15 More Dr info of goals D n=0 vs A 73% n=11/15
Quality of exchange **T = Traditional** **E = Expanded Scope** **L = Low H= High**	T L 10% n=8/79 vs H 35% n=28/79 E L 10% n=8/79 vs H 40% n=31/79	T L 22% n=10/46 vs H 30% n=14/46 E L 7% n=3/45 vs H 41% n=18/45	T L 13% n=2/15 vs H 60% n=9/15 E L n=0 vs H 67% n=10/15
Most influential expanded scope at fostering collaboration	1 – Med assessments 2 – Minor ailment 3 – Renew/extend 4 – Changing dosage	1 – Med assessments 2 – Minor ailments 3 – Therapeutic sub 4 – Renew/extend rxs	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 – Emergency supply
Expanded influence on collaboration	Communication 10/35 Collaboration 14/33 Pharmacist Utilization 12/32 Clinical Effects 13/27 Relationship 9/23 Minimal effect 8/21 Adverse effect 10/19 Role recognition 7/18 Lack of engagement 7/16 Varied response 7/14 Health system outcomes 4/13 No influence 5/10 Unsure 0/2	Communication 8/35 Collaboration 10/33 Pharmacist Utilization 4/32 Clinical Effects 4/27 Relationship 3/23 Minimal effect 7/21 Adverse effect 3/19 Role recognition 5/18 Lack of engagement 4/16 Varied response 4/14 Health system outcomes 7/13 No influence 2/10 Unsure 1/2	Communication 0/35 Collaboration 4/33 Pharmacist Utilization 3/32 Clinical Effects 1/27 Relationship 1/23 Minimal effect 1/21 Adverse effect 0/19 Role recognition 3/18 Lack of engagement 0/16 Varied response 0/14 Health system outcomes 1/13 No influence 2/10 Unsure 1/2
Collaborative relationship	CPA/written 10% n=8/79 Partnership 5% n=4/79 Collaborative 62% n=49/79 Limited 32% n=25/79 None 6% n=5/79 Negative 8% n=6/79	CPA/written 13% n=6/46 Partnership 11% n=5/46 Collaborative 57% n=26/46 Limited 30% n=14/46 None 9% n=4/46 Negative 15% n=7/46	CPA/written 33% n=5/15 Partnership 7% n=1/15 Collaborative 47% n=7/15 Limited 27% n=4/15 None n=0 Negative n=0

The following observations were noted from the questionnaire once responses were separated based on pharmacies that had no registered technicians compared to pharmacies who had one registered technician and more than one registered technician working. First, most registered technicians were employed in pharmacies in large urban centres. There was a positive correlation in the number of registered technicians and the average daily prescription volume. The more prescriptions the pharmacy completed, the more registered technicians there weree. Further, there appeared to be a positive correlation in pharmacists' engagement in ESoP activities and the number of registered technicians. Pharmacies who reported having one registered technician on a shift had a 10% increase in their estimated percentage of their workload spent on ESoP activities and a 20% increase when two or more registered technicians were on a shift. Another observation included the positive correlation between registered technicians on staff and the reported number of written and verbal agreements. Pharmacies that had more registered technicians reported more written and verbal agreements with physicians. Further analysis was done to see if there were any obvious differences in the data based on the number of pharmacists working. Table 4.9 compares the data based on if there were one, two, or three or more pharmacists working per shift.

Table 4.9 *Comparison of Questionnaire Results Based on Number of Pharmacists Per Shift*

Question	1 Pharmacist (n=62)	2 Pharmacists (n=77)	3 or more Pharmacists (n=76)
Pharmacy proximity to physician clinic	Same building 19% n=12/62 Directly beside 13% n=8/62 Within 2 blocks 27% n=17/62 Same city/town 39% n=24/62 Different town 2% n=1/62	Same building 10% n=8/77 Directly beside 14% n=11/77 Within 2 blocks 30% n=23/77 Same city/town 45% n=35/77 Different town % n=0	Same building 14% n=11/76 Directly beside 13% n=10/76 Within 2 blocks 41% n=31/76 Same city/town 32% n=24/76 Different town 0% n=0
Average # of daily Rxs	<100 34% n=21/62 100-300 60% n=32/62 >300 7% n=4/62	<100 13% n=10/77 100-300 70% n=54/77 >300 17% n=13/77	<100 1% n=1/76 100-300 53% % n=40/76 >300 % 46% n=35/76
Pharmacy Location	Large Urban 40% n=25/62 Medium Urban 5% n=3/62 Small Urban 26% n=16/62 Rural 29% n=18/62	Large Urban 43% n=33/77 Medium Urban 13% n=10/77 Small Urban 21% n=16/77 Rural 23% n=18/77	Large Urban 49% n=37/76 Medium Urban 13% n=10/76 Small Urban 18% n=14/76 Rural 17% n=13/76
Years of Pharmacist Experience	< 2y 11% n=7/62 3-10y 35% n=22/62 >11 53% n=33/62	< 2y 14% n=11/77 3-10y 25% n=19/77 >11 61% n=47/77	< 2y 9% n=7/76 3-10y 36% n=27/76 >11 55% n=42/76
Position	Staff 50% n=31/62 Clinical 3% n=2/62 Manager 39% n=24/62 Owner 18% n=11/62 Relief 10% n=6/62	Staff 65% n=50/77 Clinical 6% n=5/77 Manager 19% n=15/77 Owner 12% n=9/77 Relief 8% n=6/77	Staff 63% n=48/76 Clinical 8% n=6/76 Manager 28% n=21/76 Owner 9% n=7/76 Relief 4% n=3/76
Most used expanded scope of practice activities	1 Renew/extend rxs 2 Minor ailments 3 Emergency supply 4 Injections	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Med Assessments	1 Renew/extend rxs 2 Minor ailments 3 Injections 4 Emergency supply
% of workload in expanded scope of practice activities	28%	27%	33%
Most used medium for collaboration	Fax 96% n=50/52 Phone 0 % n=0 Other 4% n=2/52	Fax 86% n=54/63 Phone 11% n=7/63 Other 3% n=2/63	Fax 87% n=13/15 Phone 7% n=1/15 Other 7% n=1/15
Most effective medium for collaboration	Fax 46% n=24/52 Phone 35% n=18/52 DM, email 2% n=1/52 In-person/RT 12% n=6/52	Fax 44% n=28/63 Phone 43% n=27/63 DM, email 2% n=1/63 In-person/RT 10% n=6/63	Fax 47% n=7/15 Phone 40% n=6/15 DM, email 13% n=2/15 In-person/RT % n=0
Expanded Scope of Practice Statements **D = Disagree** **A = Agree**	Info sharing D 12% n=6/52 vs A 79% n=41/52 More pharm exch D 12% n=6/52 vs A 63% n=33/52 More bilateral exch	Info sharing D 10% n=6/63 vs A 68% n=43/63 More pharm exch D 8% n=5/63 vs A 75% n=47/63 More bilateral exch D 17% n=11/63 vs A 49% n=31/63 More Dr exchange	Info sharing D n=0 vs A 100% n=15/15 More pharm exch D n=0 vs n=100% More bilateral exch D 20% n=3/15 vs A 60% n=9/15

	D % n=12/52 vs A 50 % n=26/52 More Dr exchange D 38% n=20/52 vs A 25% n=13/52 Improved relations D 17% n=9/52 vs A 40% n=21/52 More partnership D 35% n=18/52 vs A 23% n=12/52 More written agreem D 37% n=19/52 vs A 50% n=16/52 More Dr info of goals D 19% n=10/52 vs A 52% n=27/52	D 48% n=30/63 vs A 24% n=15/63 Improved relations D 19% n=12/63 vs A 35% n=22/63 More partnership D 29% n=18/63 vs A 30% n=19/63 More written agreem D 38% n=24/63 vs A 29% n=18/63 More Dr info of goals D 22% n=14/63 vs A 48% n=30/63	More Dr exchange D 49% n=33/68 vs A 25% n=17/68 Improved relations D 15% n=10/68 vs A 32% n=22/68 More partnership D 38% n=26/68 vs A 26% n=18/68 More written agreem D 43% n=29/68 vs A 18% n=12/68 More Dr info of goals D 19% n= 13/68 vs A 50% n=34/68
Quality of exchange **T = Traditional** **E = Expanded Scope** **L = Low H= High**	T L 17% n=9/52 vs H 21% n=11/52 E L 12% n=6/51 vs H 43% n=22/51	T L 15% n=9/62 vs H 37% n=23/62 E L 14% n=9/63 vs H 41% n=26/63	T L 12% n=8/68 = vs H 47% n=32/68 E L 4% n=3/68 vs H 49% n=33/68
Most influential expanded scope at fostering collaboration	1 – Med assessments 2 – Minor ailment 3 – Renew/extend 4 – Changing dosage	1 – Med assessments 2 – Minor ailments 3 – Therapeutic sub 4 – Renew/extend rxs	1 – Med assessments 2 – Minor ailment 3 – Renew/extend Rxs 4 – Emergency supply
Expanded influence on collaboration	Communication 11/35 Collaboration 9/33 Pharmacist Utilization 6/32 Clinical Effects 10/27 Relationship 5/23 Minimal effect 7/21 Adverse effect 2/19 Role recognition 6/18 Lack of engagement 4/16 Varied response 3/14 Health system outcomes 1/13 No influence 3/10 Unsure 1/2	Communication 14/35 Collaboration 8/33 Pharmacist Utilization 8/32 Clinical Effects 5/27 Relationship 8/23 Minimal effect 8/21 Adverse effect 6/19 Role recognition 5/18 Lack of engagement 8/16 Varied response 4/14 Health system outcomes 7/13 No influence 5/10 Unsure 0/2	Communication 5/35 Collaboration 16/33 Pharmacist Utilization 11/32 Clinical Effects 10/27 Relationship 8/23 Minimal effect 6/21 Adverse effect 9/19 Role recognition 7/18 Lack of engagement 4/16 Varied response 7/14 Health system outcomes 5/13 No influence 2/10 Unsure 1/2
Collaborative relationship	CPA/written 15% n=8/52 Partnership 4% n=2/52 Collaborative 62% n=32/52 Limited 23% n=12/52 None 10% n=5/52 Negative 10% n=5/52	CPA/written 10% n=6/63 Partnership 6% n=4/63 Collaborative 70% n=44/63 Limited 36% n=23/63 None 5% n=3/63 Negative 10% n=6/63	CPA/written 16% n=11/68 Partnership 12% n=8/68 Collaborative 51% n=35/68 Limited 29% n=20/68 None 4% n=3/68 Negative 4% n=3/68

When separating the data based on the number of pharmacists working per shift, a few associations can be made. The most obvious was that as prescription volume increased subsequently the number of pharmacists working increased. Pharmacists with three or more pharmacists per shift were more likely to have clinical pharmacists working. Additionally they had the highest reported engagement in ESoP activities and were more likely to claim that ESoP activities increased collaboration with physicians.

Summary

The 17-question questionnaire provided some demographic data used to help paint a picture of the 183 pharmacists who submitted their responses to the study questionnaire and generally what type of pharmacy practice settings they came from. Demographic data obtained in the responses included information about the location of each community pharmacy's practice site, staffing, workload, pharmacists' experience and position, and current collaborative relationship with physicians. This demographic data collected helped provide some context to pharmacists' responses to ESoP and collaboration and included some relevant details pertaining to some variables to collaboration.

Part two of the questionnaire obtained data on ESoP activities, compared the influence of each, identified effective mediums used for collaboration, and garnered information about the perceived influence of ESoP on collaboration with physicians. Lastly, pharmacists had the opportunity to share their opinions on what they perceived as the most effective strategies at fostering collaboration with physicians. Data which helps answer the study's research questions was analysed and presented in Chapter 4. A summary of the results of the study will be included in Chapter Five; these results will be analyzed and compared to the current literature regarding pharmacist collaboration, including the various theoretical models of collaboration such as the

Community Pharmacist Collaboration Model (CPCM). The chapter concludes with suggestions for future research.

CHAPTER FIVE: DISCUSSION

In this final chapter, the first section summarizes the research methods, and findings of the study. The next section compares the findings to the existing literature regarding physician and pharmacist collaboration. This discussion is followed by an exploration of the implications of this study's findings for pharmacy practice, theory development and future research. The chapter concludes with a reflection of how the study unfolded.

Summary of Research

For this study, 1165 practicing community pharmacists across Saskatchewan were invited to participate in an online 17 question questionnaire distributed by the Saskatchewan College of Pharmacy Professionals (SCPP). The main objective was to examine how expanded scope of practice (ESoP) has influenced interprofessional collaboration between physicians and pharmacists. Another goal was to determine what level of engagement community pharmacists had in ESoP activities and which were the most impactful for collaboration. Lastly, the researcher endeavoured to discover which strategies have improved collaboration with physicians. The questionnaire's response rate was approximately 16%, and those completing the questionnaire were invited to enter a gift draw and to indicate if they would like a summary of the research findings. Of the 160 pharmacists who entered the gift draw, 70% requested a summary of the research findings. The results of the questionnaire provided data pertaining to pharmacist and pharmacy demographics, engagement in ESoP activities including the frequency and quality of exchanges, influence on physician collaboration, and strategies to foster effective collaboration.

Demographic Data

Demographic questions were asked to determine the context of the pharmacists' experience and work environment. Key demographic factors such as the location of the pharmacy, the staffing levels and levels of workload, and the years of experience of the pharmacists could have an impact on the responses on the questionnaire. This data was used to help paint a picture to gauge the current pharmacy landscape in Saskatchewan. Included in the distribution of the data are some notable difference observed between groups. However the reasons for these differences was not determined. Further research into observations and correlations may be valuable to examine specific demographic differences and their relationship with ESoP and physician collaboration.

Community Pharmacy Location

Community pharmacists participating in the study provided a diverse sample size of practice locations. Approximately half of the respondents were from large and medium urban centres and half from small centres or rural locations. Only one pharmacist reported being from a remote community. The majority of pharmacists practiced in pharmacies that were not in or directly beside physician clinics, but rather within a couple blocks or in the same town as the physician clinics. The proportion of pharmacists from each location is fairly representative of the current distribution of all practicing community pharmacists in Saskatchewan, based on data obtained from SCPP. Results between groups were quite similar with no major outliers; however there were some notable differences in some areas.

Pharmacists practicing in small urban and rural centres generally had less prescription volume, were comprised of more owners, and had less physical proximity to physician clinics. Small urban centres also had the most registered technicians. Overall pharmacists from small

urban and rural pharmacy locations reported having the most favorable opinions about the influence on ESoP on physician collaboration when compared to medium and larger urban centres. Furthermore, pharmacists practicing in small urban and rural centres classified their relationship with physicians as more positive, collaborative, and containing more partnerships and written agreements.

Comparing the data obtained from the questionnaire based on how close the pharmacy was in in relation to the physician clinic revealed some interesting details. Although fax was the main medium used when collaborating with physicians by all groups, pharmacies that were in the same building or directly beside physicians' groups were 4 to 5 times more likely to utilize verbal communication channels such as in-person communication or communication over the phone. Further they ranked in-person communication higher as an effective medium for collaboration. Pharmacies that were within or directly beside physicians' clinics were two to three times more likely to report collaborative relationships with physicians and less than twice as likely to report having a verbal or written partnership. They were also half as likely to report collaboration being limited and reduced to technical matters.

Community Pharmacy Staffing and Prescription Workload

The sample represented a wide range of prescription volumes at each pharmacy; however, on average, half the pharmacies were completing under 200 prescriptions a day and half over 200 per day, with the majority filling 100-200 daily prescriptions. Prescription workload did not seem to significantly affect pharmacists' estimated engagement in ESoP with one exception. Pharmacies doing under 100 prescriptions a day reported approximately 50% less engagement in ESoP activities than larger volume pharmacies. There appeared to be no major differences in the medium used for collaboration or their opinions on exchanges and the

frequency or quality of the exchanges. Prescription volume did not seem to affect the number of written or verbal agreements or how pharmacists viewed their collaborative relationship with physicians.

Pharmacy staff composition also varied among locations; however, most operated with one to three pharmacists per shift with the majority having two pharmacists. Most pharmacies did not have registered technicians, but those that did generally had one technician. Non-registered technicians were more common with about half having one non-registered technician per shift and the other half having two or three. Pharmacy assistants were the most common non-pharmacist staff. The approximate composition for half of the pharmacies was having one assistant per shift while the other half had two or three assistants per shift.

The more prescriptions the pharmacy completed, the more registered technicians there were. Further, there appeared to be a positive correlation in pharmacists' engagement in ESoP activities and the number of registered technicians. Pharmacies who reported having one registered technician on a shift had a 10% increase in their estimated percentage of their workload spent on ESoP activities and a 20% increase when two or more registered technicians were on a shift. Another observation included the positive correlation between registered technicians on staff and the reported number of written and verbal agreements. Pharmacies that had more registered technicians reported more written and verbal agreements with physicians.

When separating the data based on the number of pharmacists working per shift, a few associations can be made. The most obvious was that as prescription volume increased subsequently the number of pharmacists working increased. Pharmacists with three or more pharmacists per shift were more likely to have clinical pharmacists working. Additionally, they

had the highest reported engagement in ESoP activities and were more likely to claim that ESoP activities increased collaboration with physicians.

Pharmacist Demographics

Over half of the pharmacists who responded to the questionnaire had more than ten years of experience working in a community pharmacy setting, while approximately a third had between three and ten years of experience. Consequently, most participants were practicing pharmacists during the last ten years when the majority of the changes to pharmacists' scope of practice were implemented. There were a few notable differences in pharmacists' responses for those who had more than 11 years of experience. Pharmacists in this group were the only group who indicated that fax was the more influential medium over verbal communication mediums such as the phone. Out of the 25 pharmacists who stated they had a written or collaborative practice agreement, 17 or 68% of those had over 11 years of pharmacy practice experience. 10 out of 11 of the pharmacists who stated that there was no collaboration between pharmacists and physicians were also pharmacists who practiced more than 11 years.

On average, half of the pharmacists classified their position within the pharmacy as a staff pharmacist and a third as pharmacy managers or owners. Clinical pharmacists and relief pharmacists represented the smallest fraction of the pharmacist positions, at ten percent combined. Pharmacists who stated their pharmacy position was that of a clinical pharmacist reported a 50% higher engagement in ESoP activities and twice as many written or verbal agreements with physicians.

Expanded Scope of Practice Activities

The focus of the study concerned the nature of collaboration between pharmacists and physicians and the influence that an ESoP for pharmacists may have had on this collaborative work. The following section summarizes the data gathered from the questionnaire with regard to the nature of these collaborative activities and any changes that have happened, based upon the pharmacists' perceptions.

Pharmacist Engagement and Frequency of Exchanges

Pharmacists estimated that within an average workday they spend 30% of their time performing ESoP activities compared to traditional pharmacy activities. The ESoP activities they were most involved in were extending prescriptions, prescribing for minor ailments, providing injections, issuing emergency supplies, and performing medication assessments. When the data are grouped together, the average frequency of exchanges with physicians is similar regardless of whether they were providing ESoP activities or traditional pharmacy activities. However, when compared to pharmacists who spend <20% of their workload on ESoP versus those who spend >40% of their workload on ESoP, there was a positive correlation between the frequency of the exchanges and ESoP engagement. Data suggested that pharmacists who spent more of their workload on ESoP activities had a 50% increase in the frequency of exchanges with physicians.

Quality of Exchanges

Along with the evaluation of frequency of pharmacists' exchanges with physicians, the evaluation of the quality of those exchanges was asked of participants. For the purposes of this study, quality referred to exchanges that had the potential to improve patient care or health systems outcomes, as determined by the pharmacist. The amount of high-quality exchanges with

physicians were 20% greater with ESoP activities compared to traditional activities. With ESoP activities, the amount of low-quality exchanges was lower by 30% than that reported for traditional activities.

Further investigation conveyed a positive correlation between the quality of exchanges and engagement in ESoP activities. Pharmacists who spent more of their workload on ESoP activities indicated the quality of exchanges almost doubled compared to traditional activities; pharmacists who spent less of their workload on ESoP activities did not report this observation. There was a marked difference in the amount of low quality exchanges with a strong inverse correlation between low quality and amount of time spent on ESoP activities. Compared to pharmacists with low ESoP involvement, pharmacists with high ESoP involvement reported a six to seven-fold decrease in the amount of low-quality exchanges compared to traditional activities.

Influence on Collaboration

Community pharmacists suggested that ESoP influenced physician collaboration in the following ways: the amount pharmacists initiated an exchange or contact with physicians; and the amount of information pharmacists share about a patient's health and medication status with physicians. ESoP also improved the pharmacists' knowledge or understanding of the physician's concerns, goals, and objectives. Additionally, ESoP produced more bilateral exchanges with physicians and improved relationships with them.

Many pharmacists expressed that ESoP did not increase the number of times physicians initiated an exchange with pharmacists. Additionally, most did not think it increased the opportunity to work in partnership or form a Collaborative Practice Agreement (CPA) or other written agreements. The results were similar regardless of how engaged pharmacists were in

ESoP activities, except in relation to partnership opportunities. Pharmacists more heavily involved in ESoP were more likely to agree that ESoP played a role in increasing partnership opportunities with physicians compared to pharmacists less involved in ESoP activities, however results were not significantly greater than pharmacists who disagreed with the statement. This notion seems aligned with pharmacists' perspectives on the influence of ESoP on collaboration with physicians as was communicated in the questionnaire's open-ended responses.

When pharmacists were asked directly to explain in their own words what influence ESoP had on physician collaboration, the following themes emerged. The most frequently mentioned themes were ESoP's positive influence on communication and collaboration through more information sharing between pharmacists and physicians. Next, despite the responses on its minimal effect on physician-initiated exchanges, many pharmacists felt that ESoP increased utilization and awareness of their role, resulting in more referrals to the pharmacist from both physicians and clinics. Additionally, pharmacists claimed ESoP had clinical benefits, such as enhanced shared decision making and improved patient outcomes. Several also referred to the positive influence on pharmacist-physician relationship which enhanced trust, appreciation, and greater understanding of each other's roles. Some pharmacists also expressed that ESoP played a role in improving health system outcomes in particular by decreasing physician workloads. Three-quarters of the themes identified suggested ESoP had a positive influence on collaboration; however, a subset of pharmacists believed there was little or no influence on collaboration. Despite the generally positive perception, a few pharmacists were neutral as to its influence and some perceived ESoP as negatively affecting collaboration.

Some community pharmacists did not perceive ESoP as positively influencing collaboration with physicians. A few were indifferent or unsure of its effects, while others

reported minimal or no influence on collaboration. Certain pharmacists felt frustrated with the lack of physician response and engagement, especially when pharmacists sent information pertaining to ESoP. A fraction went as far as saying ESoP had adversely affected collaboration with physicians. They reported that some physicians were limiting or challenging the pharmacists' involvement in patient care. Others felt ESoP activities created territorial issues between pharmacists and physicians, which was particularly discouraging to pharmacists desire to more fully engage in providing ESoP services. Some pharmacist responses portrayed a sense of helplessness, hopelessness, or disempowerment in their ability to effectively collaborate with physicians. However, many pharmacists commented that the participation in and response to pharmacists' ESoP activities varied widely among physicians; some physicians were open and accepting and others were not, thereby making it difficult to generalize.

When community pharmacists were asked which ESoP activities were most influential at fostering collaboration with physicians, the top responses were in order: medication assessments, prescribing for minor ailments, extending prescriptions, and making therapeutic substitutions. Administering a drug by injection, ordering and interpreting lab values, and smoking cessation services were rated as the least influential overall.

Fostering Collaboration

The second open-ended question community pharmacists were asked in the questionnaire was which strategies they considered most effective at fostering collaboration between pharmacists and physicians. A large subset of the pharmacists stated the medium for collaboration played a significant role in the process. Many stated that interactions were most effective when they had the opportunity to speak directly with physicians, either in person or over the phone. However, these effective methods of communication were often impeded by

physicians' unavailability for consultation with pharmacists, or clinics banning or restricting pharmacist communication to fax only. Despite these restrictions, some pharmacists reported that written communication transmitted via fax was still an effective means of collaboration, especially if followed up with a phone call.

Many pharmacists stated that an additional strategy resulting in improved collaboration was building from ESoP activities. They indicated that medication assessments and minor ailment prescribing were particularly effective services to initiate or develop physician collaboration at an enhanced level. A further strategy was to consistently provide the physician with clear and concise communication containing strong patient-centred evidence-based medicine recommendations. Some pharmacists surmised that strong relationships could be built with physicians by: developing trust, understanding their needs and concerns, increasing awareness of each other's roles, and highlighting how pharmacists were beneficial for promoting collaboration. A few pharmacists suggested that close proximity to the physician clinic was advantageous to collaboration.

Current State of Collaboration

When pharmacists were asked to classify their current collaborative relationship with physicians, the following information was garnered. Approximately half of the pharmacists indicated good collaborative relationships with physicians, in which they worked well together and cooperated effectively on matters. About a quarter believed the collaborative relationship between pharmacists and physicians was often one-sided or limited to technical matters related to filling prescriptions. On average, about a fifth of pharmacists reported having verbal or written partnerships with physicians or groups. Lastly, a small fraction claimed there was no

collaboration what-so-ever or a hostile relationship with conflict. Overall, pharmacists suggested positive collaborative working relationships with physicians existed.

Summary

The main objectives of the study were to examine how pharmacists' ESoP influenced interprofessional collaboration with physicians. In addition, a goal of the study was to determine community pharmacists' level of engagement in ESoP activities and which were most impactful to physician collaboration. Lastly, another objective was to discover which strategies were effective at fostering collaboration. The results indicated that pharmacists spent approximately a third of their workload performing ESoP activities, with medications assessments, minor ailments prescriptions, and extension of prescriptions being the most valuable for collaboration with physicians. The overall influence of pharmacists' ESoP appeared positive and suggested increased collaboration, communication, pharmacist utilization, enhanced clinical management, and improved relationships. The most effective strategies for fostering collaboration were increasing exchanges particularly by maximizing opportunities for direct communication with physicians, utilizing EsoP as an avenue to collaborate, and effectively communicating strong evidence-based recommendations rooted in patient-centered care. Enhancing relationships with physicians, increasing awareness of each other's roles, and understanding their needs and objectives were also considered valuable.

Although this study's objectives were not to determine barriers to pharmacist and physician collaboration, the questionnaire rendered some interesting considerations on the subject matter. The questionnaire identified some reoccurring themes related to hindrances to collaboration. Lack of physician engagement and participation in pharmacists' efforts to collaborate, particularly with communication of EsoP activities, were recognized as a problem

and source of frustration for some pharmacists. Another barrier impeding pharmacists' ability to collaborate, was physicians or physician clinic staff restricting direct communication channels by refusing phone calls and only accepting faxed communication. Lastly, a few pharmacists suggested that providing EsoP activities was viewed as threatening in nature to some physicians and created hostility. Despite hinderances, most pharmacists classify their relationships with physicians as collaborative in nature.

Discussion and Interpretation of Findings

Community pharmacists who responded to the questionnaire were from various sized urban and rural settings across Saskatchewan. Pharmacists provided information on engagement in ESoP activities, influence on physician collaboration, and strategies for effective collaboration. Although traditional pharmacy activities still account for the majority of pharmacists' workload, community pharmacists in Saskatchewan report spending a significant amount of their workload engaged in ESoP activities**.** Subsequently, the study's findings include a reasonable amount of data on ESoP and physician collaboration for analysis and interpretation.

Community Pharmacist Engagement

On average community pharmacists indicate that they spend approximately 30% of their workload on ESoP activities. The majority of pharmacists also report having an effective collaborative working relationship with physicians in which they work well together consistently. Further many of the open-ended responses results reinforce findings by Jove et al. (2014) and Kelly et al. (2013) that community pharmacists largely show a willingness to participate collaboratively, demonstrate an understanding of the value of collaboration to improved patient outcomes, and want more collaboration opportunities. The results challenge Gilbert and Ray's (as cited in Dobson et al., 2006) proposition that most community pharmacists

are unwilling to participate in team-based models of interprofessional practice. Furthermore, findings suggest that interprofessional collaboration in community pharmacies may be misunderstood and could require an alternate perspective from which to examine it, especially when compared to models derived from primary health care teams in institutional-like settings.

Influence on Collaboration

This study identified several ways that ESoP influenced collaboration with physicians. The most common reoccurring theme in the data was the effect ESoP had at increasing and improving communication and collaboration between pharmacists and physicians. Along with the positive impact of ESoP, was acknowledgement of the challenges faced by community pharmacists to collaborate effectively. Additional influences of ESoP on physician collaboration were in the areas of pharmacist utilization, relationships, role recognition and awareness, and on health system outcomes.

Communication and Collaboration

The results from the study indicated the largest influence of pharmacists' ESoP has been enhanced communication and collaboration with physicians. Liu and Doucette (2011) believed that effective communication between pharmacists and primary care providers plays a vital role in successful provision of medication management services. The importance of communication is also referred to in theoretical models of collaboration as described in the literature. Communication is the third stage in Artimage's taxonomy of collaboration, which denotes encounters, correspondence, and transfer of information, followed by the fourth stage, collaboration (Bradley et al., 2012). Hudson's models of collaboration also suggest that communication is the pre-requisite or perhaps the foundation for collaboration (Hudson et al., 1997).

When we apply the study's data to the Community Pharmacists Collaboration Model (CPCM), it supports the premise that ESoP facilitates a transition away from a differentiated system to one that is more integrative. ESoP assists in moving collaboration forward along the spectrum of possible collaborative actions. Data obtained demonstrates a positive correlation between the frequency of exchanges with physicians and ESoP activities. Rathbone et al. (2016) discussed the importance of the frequency of interactions between physicians and pharmacists and surmised that increased frequency is a critical element for successful collaborations between physicians and pharmacists. The study results suggest that the more pharmacists actively perform ESoP activities, the more frequent the exchanges with physicians become. Furthermore, pharmacists report initiating these exchanges more often with physicians because of ESoP activities. Subsequently, they are having more bilateral communication with physicians. Bidirectional communication enhances collaboration and is an important component in effective multidisciplinary teams (Doucette et. al., 2005). Although, most pharmacists thought that ESoP enhanced bilateral exchanges when initiated by the pharmacist, many indicated that it did not significantly increase physician-initiated exchanges.

Most pharmacists did not feel that ESoP increased the opportunity for partnerships, Collaborative Practice Agreement (CPA), or other written agreement. Although most pharmacists stated ESoP did not play a significant role at increasing physician-initiated exchanges, partnerships, or formalized written agreements, many indicated it was an avenue they could utilize to enhance collaboration with physicians. Further, many pharmacists expressed that ESoP contributed to more utilization of pharmacists and increased referrals from clinics. This finding suggests that physician-initiated engagement was enhanced with ESoP; however it was perhaps more indirect or less overt in nature. According to Oandasan et al.'s (2006) Spectrum of Collaboration, referrals are a sign of increased interdependence and a step toward collaboration.

Referrals from one healthcare professional to the next is a step toward interdependence and co-provision of care (Oandasan et al., 2006). The CPCM was altered, as seen in *Figure 5.1*, to separate bilateral exchange and physician-initiated exchange since they have differing results obtained from the data of this study.

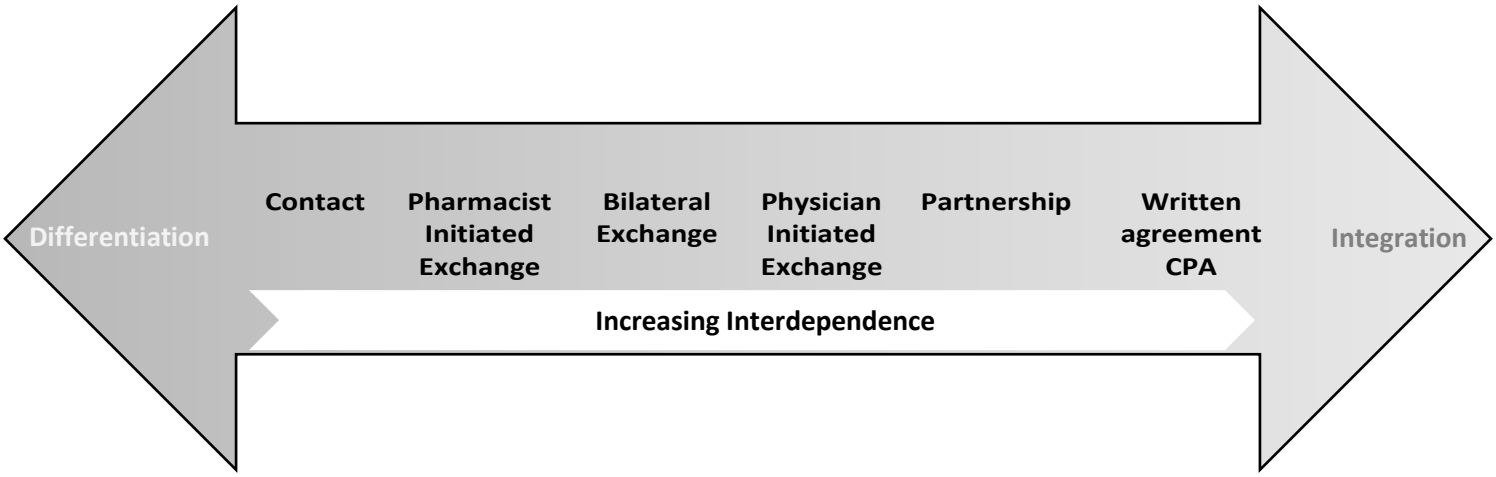


Figure 5.1 Adapted Community Pharmacist Collaboration Model (CPCM)

In the adapted CPCM, collaboration is not one single entity or stage that is reached, but rather varies depending on the exchanges and agreements made, some being more differentiated in nature and some more integrative. Collaboration begins at contact and progresses through a series of pharmacist and physician exchanges toward more formalized partnership and written agreements. As exchanges progress toward integration, there becomes an increasing level of interdependence required from pharmacists and physicians.

Barriers

Although most pharmacists report good collaborative working relationships with most physicians, some expressed concerns over lack of physician participation in the process. Some pharmacists suggested that collaboration was absent or impeded due to lack of physician engagement. Despite pharmacists attempting to collaborate with ESoP activities, some

physicians never reciprocated communication. Often this lack of response was very physician dependent or limited to certain physicians. This finding may explain why ESoP activities did not produce more physician-initiated exchanges or result in more partnerships and formalized agreements. As expressed in the CPCM model, there is an increasing level of interdependence required or participation expected from physicians as exchanges become more integrated in nature. This concern was reflected in the literature by Van et al. (2011) where they ascertained that out of all the known barriers between pharmacists' and physicians' collaboration and integration of services, lack of interest from physicians was at the forefront. The reasons for lack of physician engagement is unclear in this study; however, Edmunds and Calnan (2001) surmised that collaboration could be hindered due to the expansion of the pharmacist's role if physicians see it as a threat to their autonomy and control. Transformation to a team-based approach in healthcare has been slow, largely due to professionals continuing to protect their turf or limiting their scopes of practice to respond to their own needs and interests rather than those of the population (Oandasan et al., 2006). If physicians are reluctant to communicate with pharmacists or see their expanded scope as a threat, exchanges will likely fail to progress toward integration.

An additional obstacle identified from the data was some physicians or clinic staff restricting communication mediums that were considered effective for collaboration and good patient care. Most pharmacists reported that communication with physicians was often done via fax. However, when asked which the most effective medium for collaboration was, almost half said the phone. Further, when pharmacists were asked to suggest effective ways for fostering collaboration, a significant proportion claimed that speaking directly with physicians either through the phone or in person had the most significant impact. This sentiment and concern over lack of verbal communication with physicians was also expressed by Kelly et al. (2013) when

querying pharmacists in Newfoundland about their views on collaborative practice. The data suggests that ESoP activities create an avenue for enhanced collaboration between pharmacists and physicians; therefore physicians should consider providing more opportunities for direct communication with community pharmacists. This simple act could potentially enhance the collaborative relationship and result in improved patient care and greater efficiencies in healthcare.

A study by Luetsch and Rowett (2016) aimed at developing pharmacists' interprofessional communication skills and thus improving their ability to collaborate, acknowledged that there were both external and internal barriers to effective collaboration between pharmacists and physicians. However, the internal barriers such as attitudes, beliefs, and understanding of respective roles seemed to disappear once pharmacists and physicians actually experienced collaborative practice and established a professional relationship (Luetsch & Rowett, 2016). In Luetsch and Rowett's (2016) study, pharmacists were encouraged to develop a genuine curiosity about the health professional's practice, priorities in patient care, motivations for practice, and identify gaps in practice to create opportunities for interprofessional learning and collaboration. Pharmacists participating in my study seemed to support the notion that ESoP played a role in increasing their knowledge or understanding of physicians' concerns, goals, and objectives. This finding suggests that if community pharmacists can continue to pursue such professional relations and utilize ESoP as an avenue to do so, barriers can be minimized and collaborative practices forged.

Pharmacist Utilization

Community pharmacists expressed that collaboration was enhanced with ESoP activities, which subsequently resulted in more pharmacist referrals and utilization when compared to

traditional activities. One pharmacist stated that "Expanded scopes have allowed physicians to have greater confidence in our knowledge and abilities, allowing them to refer to us for their patients, or for their own information". Bradley et al. (2012) provided a compelling possible explanation as to why this may be. They surmised that traditionally pharmacist communications were limited to routine matters such as querying prescriptions or alerting the physician to potential problems. Since historically pharmacists provide the final check, communication with physicians likely involved pharmacists reporting errors and mistakes, thereby being the bearers of bad news or only initiating communication when there was a problem. Subsequently, the collaborative relationship may have been adversely affected. It is possible that collaboration was improved with ESoP activities compared to traditional activities because those interactions were more likely to share beneficial information or make recommendations to proactively improve patient care, rather than correcting physician error. ESoP activities may shift the focus of the contact away from correcting errors and redirect it toward clinical management, sharing information, and patient care. Oandasan et al. (2006) stated that collaboration occurs when team members share goals and are mutually accountable to provide patient care. This finding may explain why pharmacists reported medication assessments and minor ailment prescribing as the most beneficial ESoP activities, since they are both highly clinical and patient centered. Communication that is clinically oriented and patient-centered may provide a greater opportunity to foster characteristics known to enhance collaboration such as improved relationships, trust, role recognition, and a better understanding of physicians' needs. Zillich et al. (2004) stated:

> As physicians become more familiar with pharmacists and achieve confidence in their abilities, trust and commitment to the relationship begin to develop. Also, after trust has developed, physicians may be more willing to initiate the interaction by seeking the pharmacists' advice regarding specific clinical considerations. This is consistent with the

> CWR model, which posits that the more the providers communicate with one another and the more physicians utilize pharmacists' services, the greater the collaboration between them. (p.767)

This may explain why community pharmacists indicated that ESoP was an effective way to foster collaboration with physicians.

Clinical effects

Some pharmacists indicated that ESoP enhanced clinical management, including more shared decision making and improved patient care. One pharmacist stated that "Expanded scopes have allowed physicians to have greater confidence in our knowledge and abilities, allowing them to refer to us, for their patients, or for their own information". Another pharmacist reported that physicians were "More likely to take phone calls from us and open to making changes based on advice from us". When pharmacists were queried on strategies for fostering collaboration with physicians, many stated that providing strong recommendations rooted in evidence-based medicine that were patient centered were effective. Liu and Doucette (2011) stated that to start a collaborative relationship, a pharmacist first needs to show the physician their knowledge of medications and skills to provide patient care. They also expressed that the pharmacist's knowledge and skills provide the foundation for their responsibilities. An example is in Medication Therapy Management services, where pharmacists use their knowledge and skillset to review patients' medications and make proper pharmacotherapy recommendations to physicians (Liu & Doucette, 2011). Some community pharmacists who participated in the study suggested that the most beneficial ESoP activities for fostering collaboration with physicians were medication assessments and minor ailment prescribing. Both activities are highly clinical activities that require the utilization of a pharmacist's skill set in reviewing a patient's

medication and providing pharmacological recommendations. Doucette et al. (2005) explained that "in practice settings where pharmacists have been integrated successfully into drug therapy management process, patient outcomes have improved" (p. 566). The study data suggests that the clinical nature of ESoP activities may provide more opportunities for pharmacists to provide strong evidence-based recommendations or showcase their skill set that could improve patient care, thereby increasing physician confidence and trust. Some pharmacists in return have reported feeling more valued, respected, and appreciated by the physician, thereby further enhancing the collaborative relationship.

Relationships

A theme some community pharmacists identified when asked about the influence of ESoP or strategies for fostering collaboration with physicians was the importance of enhancing relationships with physicians and the development of trust. One pharmacist stated that "We collaborate a lot more with physicians due to our expanded scope of practice. I believe it is a positive increase in collaboration and allows for more opportunity to better our relationships with physicians and work together for the benefit of the patient.". Some community pharmacists stated that ESoP increased the trust and confidence between the two parties, or perhaps created more opportunity for its development through the interaction. Others suggested that consequently there were more referrals and utilization of the pharmacists by physicians.

Bradley et al. (2012) and McDonough and Doucette's (2001) work demonstrated that trustworthiness is an important factor in collaborative relationships. In the Collaborative Working Relationship (CWR) model, trust is considered an exchange characteristic, which plays a role in advancing collaboration forward. Further, when the CWR was utilized to measure drivers for physician-pharmacist collaborative relationships, trustworthiness and role

specification were considered “the most significant factors influencing collaborative relationships for both professional groups” (Bradley et al., 2012, p.38). Hudson et al. (1997) also suggested that trust plays an important role in integration. Additionally, a study by Loffer et al. (2017) examining perceptions of interprofessional collaboration between physicians and pharmacists indicated that mutual trust and appreciation appear to be significant factors for influencing the quality of interprofessional collaboration. They recommended that for successful interprofessional collaboration to occur, interventions and initiatives should focus on increasing trust. When analyzing this data in relation to the study results, increased interactions from ESoP activities may have contributed to improved relationships and enhanced trust between pharmacists and physicians, thereby influencing the claims of improved collaboration.

Role Recognition and Awareness

Some pharmacists surmised that ESoP increased role awareness or recognition. Furthermore, some suggested that role awareness and recognition were effective strategies at fostering collaboration with physicians. This statement is in alignment with Doucette et al.’s (2005) belief that “when pharmacists and physicians jointly determine specific roles, the relationship is likely to become more collaborative” (p. 572). In the CWR model, role awareness is considered the starting point for the CWR, followed by role recognition. Liu and Doucette (2011) discussed the importance of role specification in the formation of collaborative practice. They identified that “role specification measures the extent of fit and interdependence between pharmacists and physicians” (Liu & Doucette, 2011, p. 415). Role specification is particularly important when establishing collaboration or when current collaboration is low between the two parties.

Ensuring physicians are aware of the community pharmacists' new role may be of vital importance considering the rapid changes to pharmacists' scope of practice. This awareness is especially important considering that many of the new activities are often ones traditionally devoted to physicians, such as prescribing, adapting prescriptions, and ordering and interpreting lab tests. Kelly et al. (2013) explained that physicians' perceptions of the pharmacist role were more technical and tied to dispensing rather than cognitive pharmacist functions. They also claimed that further studies reported a disconnect between physicians' and pharmacists' perceptions on the perceived role of the pharmacist in patient care. This sentiment was reflected in my study by one pharmacist who said pharmacists perceived confusion or unawareness from some physicians about pharmacists' scope of practice. This lack of awareness could increase the likelihood of physicians perceiving ESoP exchanges in a negative light.

Poor awareness of pharmacists' new role could create territorial issues with physicians, particularly if physicians view expansion of the pharmacists' role as a threat. One pharmacist in the study reported that "Once physicians understand our scope of practice they are more open to suggestions". Another pharmacist stated that "Expanded Scope of Practice has allowed an avenue of communication and education between both parties as to what each can do and allowed us to better understand the roles of pharmacists and physicians as a team". In my experience working as a pharmacist, awareness and support of each other's roles often begins in post-secondary teaching and learning; however further encouragement by governing and advocacy bodies for both professions may also be advantageous. Community pharmacists, as part of their professional responsibilities, may also need to be cognizant of how ESoP activities are being perceived by local physicians and take an active role to inform, coordinate care with, or reassure physicians as to their mutual value. Pharmacists can encourage collaborative relationships by clarifying each party's responsibilities in the care process and showing the

physician their knowledge of medications and skills to provide patient care (Liu & Doucette, 2011).

Health Systems Outcomes

A common theme identified by pharmacists when questioned about the influence of ESoP was its ability to decrease the workload of the physician and improve efficiencies in the healthcare system. One pharmacist expressed that "ESoP has given our pharmacists a forum to show the physicians exactly what we can add to patient care and to ease their workload". Another pharmacist reported that "Doctors are starting to appreciate us taking off some of the pressure. Therefore, we have (been) able to create extended CPAs with several different clinics and physicians". Oandasan et al. (2006) acknowledged that collaboration had the potential to improve patient care, enhance patient safety and lower workload among healthcare professionals. Bryant et al. (2010) indicated that both community pharmacists' and physicians' believed improvements in collaboration could result in greater satisfaction and professional development, while making the healthcare system easier to use. This shared belief may be an encouraging sentiment considering maximizing interprofessional collaboration was suggested as a way to address the need for reducing the burden of the Canadian Health Care System and making it more sustainable (CPhA, 2016a). ESoP activities themselves have been suggested as a way to improve health system outcomes. Some pharmacists in the questionnaire indicated that prescribing for minor ailments was particularly valuable for collaboration with physicians. The CPhA (2016b) report stated:

> The Ontario Pharmacists' Association estimates that the implementation of a pharmacist minor ailment program would result in an increased capacity of 570 full-time general practitioners (GPs) and an economic savings of $4.7 million to $14 million per year. A

> proposal by the British Columbia Pharmacy Association states that $95 million is spent yearly on the treatment of minor ailments by physicians and transferring those services to a pharmacist would yield savings of $32 million annually (p. 16).

Expansion of pharmacists' scope of practice has the potential to increase patient access to health services, potentially saving valuable health care dollars, and alleviating physician workloads.

Implications for Theoretical Models of Collaboration

The CWR lists five progressive stages in collaboration: professional awareness, professional recognition, exploration and trial, professional relationship expansion, and commitment (Liu & Doucette, 2011). The model stated that collaboration is a process influenced by three sets of characteristics including individual, context, and exchange, each of which have their own multiple variables (Liu & Doucette, 2011). Doucette et al. (2005) proposed that the three most significant of these variables associated with collaborative care were professional interaction, trustworthiness, and role specification. These three variables are consistent with factors that community pharmacists suggested as being effective for fostering collaboration with physicians. Additionally, some pharmacists who completed the questionnaire suggested that ESoP influenced collaboration by providing more and higher quality professional interactions, enhanced relationships and trust, and facilitated more role awareness and recognition. The alignment of these principles may have contributed to pharmacists' claims that ESoP positively affected or enhanced collaboration with physicians.

Results from this study also suggested that foundational principles for collaboration, as identified by the CWR, such as relationships, trust, role recognition, and role awareness, may not necessarily have to be present prior to beginning pharmacist-physician collaborations. Some pharmacists in the study expressed that collaboration was often improved after ESoP interactions

had been implemented. It is possible that attributes deemed beneficial for collaboration could be a fortunate biproduct of engagement in ESoP activities, which can, in turn, foster more robust collaboration. *Figure 5.2* illustrates a theory on collaboration as suggested by this study's results called the Community Pharmacist Collaboration Positive Feedback Loop (CPCFL). The diagram depicts that an increase in exchanges that move towards integration results in the production of biproducts that are attributes deemed beneficial for enhancing collaboration. This interaction implies a positive feedback relationship between the two entities. Furthermore, each step closer to integration contributes more valuable attributes for collaboration and therefore has an even greater impact in advancing it forward.

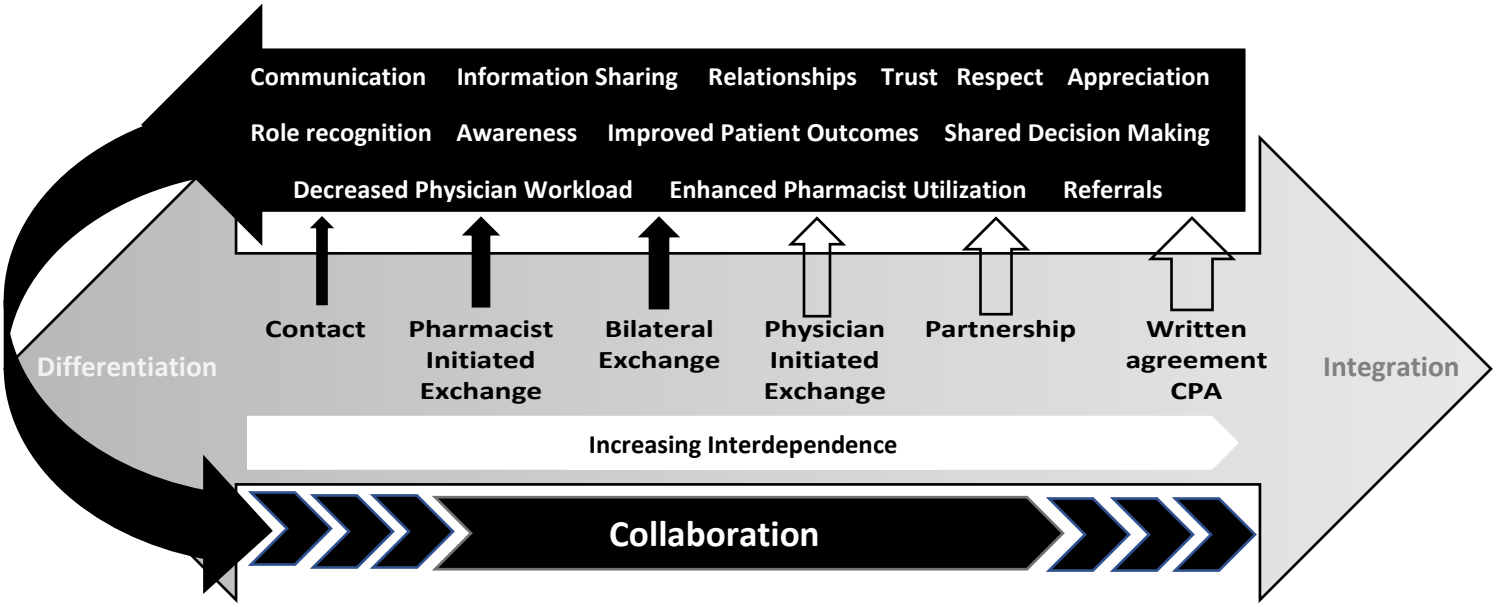


Figure 5.2 Community Pharmacist Collaboration Positive Feedback Loop (CPCFL)

Advances in collaboration might not need to be as complicated to implement as the CWR model portrays it to be. Community pharmacists likely do not have the time or resources to address all the factors identified as requirements for advancing collaboration with physicians. The CPCM and CPCFL models may offer a more practical and attainable solution for advancing

practice toward integration. For pharmacists pursuing opportunities for more contact, more pharmacist-initiated exchanges, more bilateral exchanges, more physician-initiated exchanges, and ultimately more partnerships and formalized agreements, these factors can provide an avenue for enhancing collaboration and organically fosters attributes deemed beneficial for collaboration.

Further, the CPCM and CPCFL models are versatile; regardless of which stage a pharmacist is at, movement can start from that location. For example, a pharmacy that has limited contact can begin by simply increasing contact points with physicians and having their pharmacist initiate more exchanges. Another pharmacy that has more enhanced collaboration with physicians in the form of active bilateral exchanges may want to pursue a partnership on a mutually beneficial activity. ESoP activities are innately more aligned with physician activities, are generally more clinical, and have built in expectations of collaboration; because of these characteristics, they serve as a pathway that community pharmacists can utilize or build upon to advance collaboration with physicians. Pharmacists in the study confirmed that building from ESoP activities such as medication assessments helped foster collaboration; however, the pharmacists also offered more suggestions for improved collaboration. Incorporating strategies that community pharmacists have deemed effective at fostering collaboration with physicians could help advance collaborative efforts, especially when coupled with ESoP activities.

Strategies for Collaboration

When community pharmacists responded to the study's questionnaire regarding effective strategies for fostering collaboration, some common themes emerged. *Figure 5.3* lists the seven most common themes identified in order from greatest to least. Interestingly, most of these

themes are similar to those mentioned as influences of ESoP activities on physician collaboration.

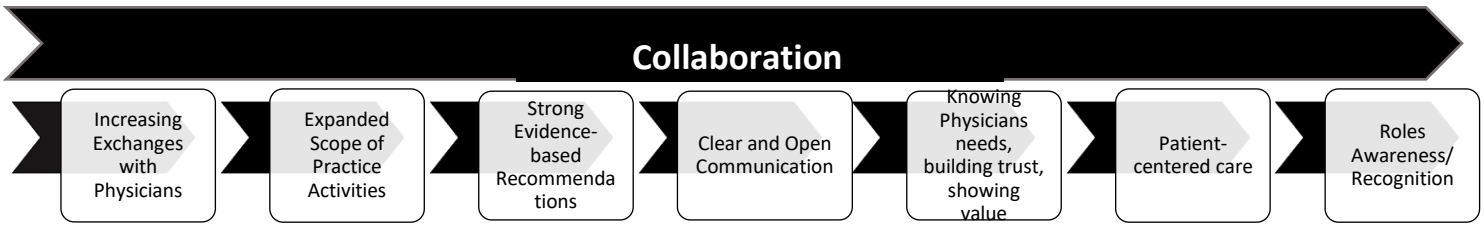


Figure 5.3 Strategies for fostering physician collaboration

When these strategies are inserted into the CPCFL model and rearranged in a chronological fashion, we can see the following working model for collaboration, taking into consideration ESoP activities.

Figure 5.4 provides a visual depiction of the study results. The figure portrays how ESoP activities may contribute to advancing collaboration forward. Community pharmacists indicated that some strategies for fostering collaboration forward were to utilize ESoP activities as an avenue to collaborate with physicians. Using the communication involved in ESoP activities as an opportunity to increase the physician's awareness of the pharmacist's role, using opportunities to communicate directly with physicians, and providing clear and concise evidence-based recommendations that are patient centered may contribute to furthering collaboration. Communication received from the physician can provide more information about physicians' needs, thereby providing the pharmacists with information to adapt their communication style and target services to physicians' needs. As ESoP enhances the quantity and quality of the exchanges between professionals, biproducts or influences of the ESoP interaction such as relationship building, trust, respect, appreciation, increased understanding of role, sharing of information, and shared decision making further support the collaborative relationship and

increase the level of interdependence between the two parties, further pushing it toward integration.

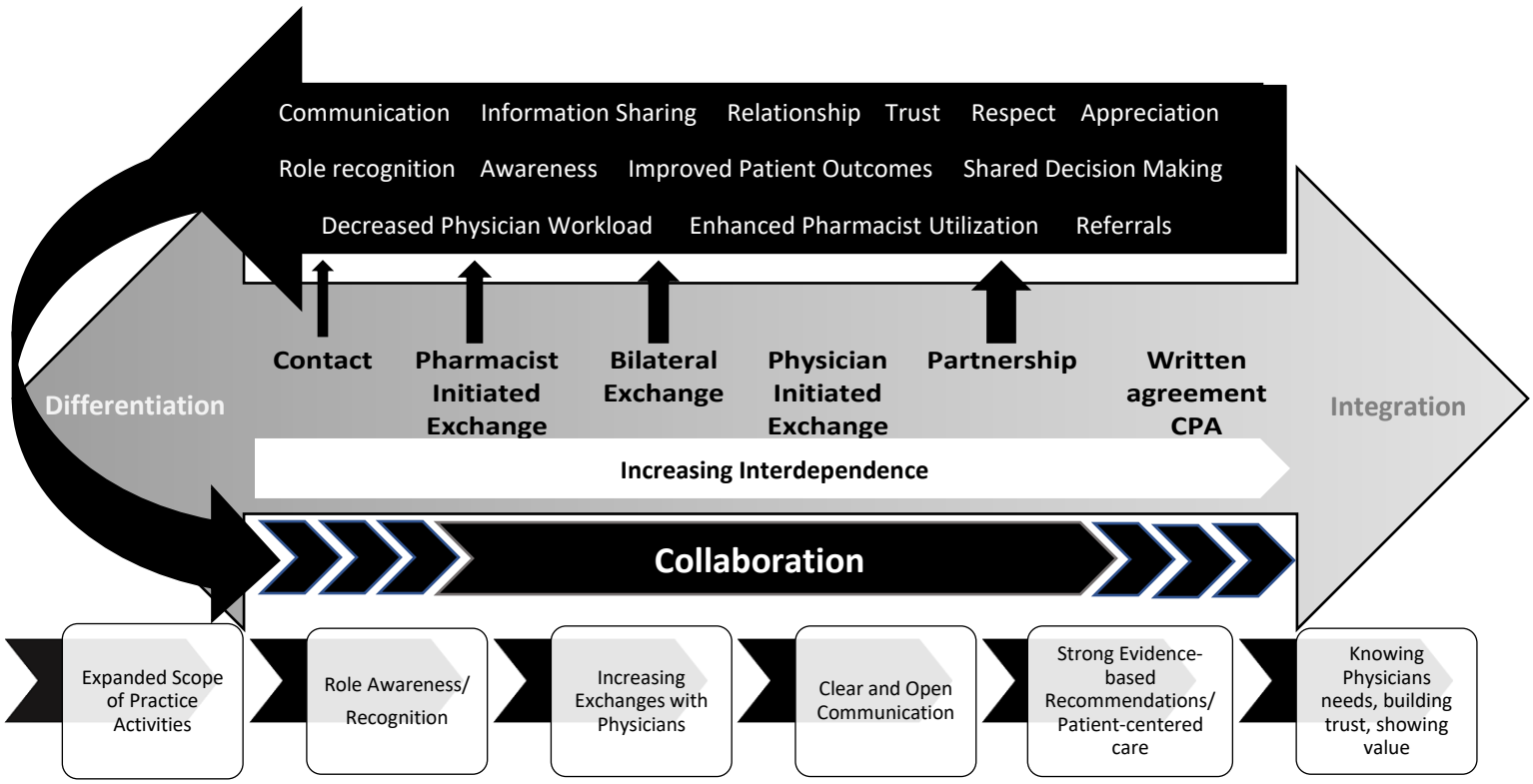


Figure 5.4 ESoP and the CPCFL model

Data suggest that ESoP may contribute to enhancing collaboration with physicians. Community pharmacists who want to expand their services must foster collaborative relationships with physicians that go beyond discrete exchanges. One approach is to look at each interaction as an opportunity to expand the relationship (McDonough & Doucette, 2001). ESoP activities may provide a unique opportunity in which to do so compared to traditional pharmacy services.

Implications for Practice

The Canadian Healthcare System is currently overburdened and in need of reform in order to ensure its continued sustainability (CPhA, 2016b). Stressors to the healthcare system will likely continue as the rates of chronic disease rise, the population ages, and technical and pharmaceutical advances drive up costs (CPhA, 2016b). Focus is being placed on making fundamental changes at reorganizing, financing, and delivering healthcare in a way that is more sustainable and efficient, while still providing good patient outcomes. Healthcare professionals have been called upon to increase interprofessional collaboration to improve patient outcomes and respond to the changing landscape of healthcare (Dobson et al., 2006). Expanding the scope of practice of healthcare professionals is one of the ways proposed to help address the situation (CPhA, 2016a). Pharmacists' collaboration has proven valuable in a variety of programs; however research is limited when it comes to understanding collaboration as a routine part of community pharmacy practice (Dobson et. al., 2016). In Saskatchewan, 75% of pharmacists' jobs are in the field of community pharmacy practice (Bareham, 2016; Government of Saskatchewan, 2014). Therefore, if we are going to have a major shift in pharmacists improving patient outcomes and reorganizing the health system to improve efficiencies, it is essential that we understand how to foster and implement collaboration at a community pharmacy level.

The results of this study support the notion that many community pharmacists seem interested in collaborating and appear engaged in the process. Most pharmacists view their relationship with physicians in a positive light in which they work well together in a coordinated and collaborative manner. Few pharmacists believe there is no collaboration occurring between the two parties or that the relationship is adverse or marked with hostility. Further, it appears that most community pharmacists are implementing Expanded Scope of Practice (ESoP) activities into their daily workload. Data indicates that as pharmacists become more involved in providing

ESoP activities, the more likely they perceive them as positive or valuable for collaboration. They are also more likely to classify their relationship with physicians as a collaborative one compared to pharmacists who are less engaged.

The findings suggest that community pharmacists' involvement in ESoP may improve communication and collaboration with physicians and could possibly support goals of improved patient and health systems outcomes. ESoP activities that are more clinical and patient centered compared to traditional activities may be better received by physicians than traditional exchanges, and thereby help encourage more collaboration. Increasing the frequency and quality of exchanges with physicians could play a role at fostering attributes considered important for improved collaboration such as relationship development, professional interactions, role recognition and awareness, and understanding physicians' needs. The data suggest that ESoP may be an avenue that pharmacists can practically implement to encourage more collaboration, achieve more robust collaboration, or use to help develop foundational principles for advancing collaboration.

The data also indicates that pharmacist engagement in ESoP alone may not be enough to secure the richest form of collaboration such as partnerships, Collaborative Practice Agreements (CPA) or a written commitment for both parties to work in a formalized and interdependent manner. It draws attention to the notion that there is a need to engage physicians more in the process and have them more actively utilizing pharmacists' newly expanded roles. If community pharmacists are going to continue to positively influence collaboration with physicians and move towards integration of services, they need to identify how to enhance physician engagement and formalize the commitment to work together in the form of verbal, written agreements, or CPAs.

Expanding community pharmacist collaboration is particularly important considering some literature is scrutinizing community pharmacists for not collaborating, not embracing their expanded role, or not being active members of healthcare teams (Dobson et al., 2006). It is possible that the rigid descriptions of interprofessional collaboration derived from primary healthcare teams have been directly applied to community pharmacy, and not adapted to meet the unique environment within which community pharmacies operate. The CPCM or CPCFL models may be a more practical and representative model for examining collaboration in the community pharmacy setting than existing models of collaboration. Community pharmacists, given their unique role and practice environment, from among all of the healthcare professionals, may have the largest role to play in improving patient outcomes, improving efficiencies and reducing the financial costs of delivering high quality care in a coordinated fashion.

Organizational theory supports the premise that most effective organizations are ones that have both high levels of differentiation and integration; therefore, it is incumbent that we examine strategies to assess and improve the levels of integration (Lawrence & Lorsch, 1967). The pharmacist profession began as highly integrated with physicians and over time has become largely differentiated and specialized (Liaw, 2009). The changes to the healthcare system are now demanding more integration for its continued and improved functioning. While I do not believe that community pharmacists should completely return to a fully integrated system, the specialization of pharmacists' duties is still valuable. It may be beneficial to strive for more equal balance between integration and differentiation. Literature suggests the need for more incorporation of activities that are integrated in nature. Continued development and expansion of the pharmacist's role, increased pharmacist utilization, and exploration into best practices for community pharmacist collaboration, may help advance the integration of services to contribute

to the wide spread overarching efforts of improving the sustainability of the Canadian healthcare system.

Limitations of the Study

The research conducted had the following limitations:

- Opinions on the influence of ESoP on pharmacist and physician collaboration were only taken from the community pharmacist's perspective. Therefore, results may have been limited or one-sided and not fully representative of the true effect.
- The study used a quantitative research design and therefore did not fully explore opinions expressed in the questionnaire. Open-ended responses were often brief and lacked detail.
- The questionnaire was distributed during the start of influenza season and therefore may have reduced the potential number of participant responses due to the increased workload on pharmacists at the time. Furthermore, SCPP did not send out the final email reminder to pharmacists. This may have reduced the potential sample size which could have influenced the results.
- Participating pharmacists may have been pharmacists who were more involved in ESoP activities or already working collaboratively with physicians. Therefore, the data may not be as representative of the group of practicing pharmacists as a whole.

Recommendations for Further Research

Although this study produced a lot of interesting data regarding the influence of ESoP, the results are indicative of community pharmacy practice and ESoP in Saskatchewan. It would be interesting to discover if the results held true if they were compared to other provinces with varying degrees of ESoP regulation. Additionally, it would be valuable to explore the opinions further in the form of qualitative inquiry. Qualitative inquiry could provide a more rich and in-

depth understanding of collaborative practices between community pharmacists and physicians and provide more perspectives and insights into underlying themes identified. The following questions emerged that require further exploration:

- Does the increase in registered pharmacy technicians help alleviate pharmacists' technical workload so they can be more involved in ESoP or collaborative efforts?
- Why do pharmacies in smaller centres report more favorable relationships and collaborative agreements than those located in more populous regions?
- Does high prescription volumes adversely affect a pharmacists' engagement in ESoP activities and collaboration with physicians?
- Does pharmacy ownership affect engagement in ESoP activities or increase collaborative agreements and why?

An additional way to provide a more well-rounded perspective on the subject matter is to query physicians on the influence of ESoP. This approach would also help researchers and practitioners better understand the current state of collaboration and help identify some alternative strategies for improved collaboration. Given the results of the study, exploring ways community pharmacists can more actively engage or better communicate ESoP activities with physicians could prove valuable. Interviewing both physicians and community pharmacists who have CPAs or strong collaborative relations may also provide direction regarding factors necessary for successful partnerships and potentially provide direction to community pharmacists on how to foster such partnerships.

Exploring the CPCM and CPCFL theoretical models through further study could be beneficial. CPCM and CMCFL models potentially offer a theoretical basis to better understand collaboration in the context of a community pharmacy setting. Further, they appear less

complicated than the CWR model, making them perhaps more applicable and easier to implement. CPCM and CMCFL models could be researched and potentially refined as a practical tool to measure and help direct progression of collaboration with physicians in the community pharmacy setting.

Concluding Thoughts

Researching pharmacists' ESoP and collaboration in community pharmacies has been rewarding and insightful. Gathering information directly from practicing community pharmacists, through a study designed by a community pharmacist working in collaborative practice, offers another perspective on which to examine the topic. I could identify with some of the findings from this study based on experiences working in community pharmacy. In my experience most pharmacists are interested in and eager to take on more responsibilities to support the best interest of their patients. Many pharmacists are yearning for better relationships with physicians and want to contribute their knowledge and skill set through interprofessional collaboration. Pharmacists' apathy often originates in a place of despondency and futility that their efforts will be valued, or result in meaningful changes, and that efforts may be met with hostility or resistance. I was surprised that most pharmacists did not feel ESoP increased partnerships or written agreements since my experience was the contrary. However after reflecting on the data, I can see how lack of physician engagement could possibly limit such efforts. The most exciting and challenging portion of the study was adapting a new theoretical model on which to examine collaboration in community pharmacy.

When reflecting upon the study, the quantitative design chosen was successful at obtaining a large volume of data to gain more perspective on the topic, as anticipated. However, it would have been valuable to have the opportunity to explore pharmacists' opinions on

collaboration in greater detail. Although my quantitative study design intentionally included open-ended questions to obtain more in-depth opinions from pharmacists, unfortunately many of the responses were brief and lacked detail or explanation. A mixed-method or qualitative study design would have provided more opportunity for a deeper and more robust understanding of the data, which may have identified new themes or ideas pertinent to collaboration.

The study provided data on ESoP and collaboration, including the fact that partnerships and written agreements are actively occurring between community pharmacists and physicians in Saskatchewan. I intend to build upon the study's findings by further exploring these partnerships, along with pharmacists' and physicians' perspectives on collaboration with those who have successful partnerships or agreements. I am also excited to further test, experiment, and refine my theoretical model of collaboration through further study. Additional areas of interest include exploring what role pharmacy workload and staffing play in ESoP and interprofessional collaboration, including the incorporation of registered technicians, and the role of pharmacy managers or business owners. Another keen area of interest includes the teaching and learning of collaboration and interprofessional practice, particularly in a post-secondary environment. I hope these findings will lead to considerations for practice and for further research, with improvements to outcomes for health systems and patients.

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Appendix A: Community Pharmacist Questionnaire on Expanded Scope of Practice and Physician Collaboration

DIRECTIONS: Below is a list of questions pertaining to community pharmacists' expanded scope of practice and collaboration with physicians. The purpose of the survey is to gain insight into your current community pharmacy environment, your experience with expanded scope activities, and explore the effect it has had on interprofessional collaboration with physicians. Please provide an honest, accurate, and if possible, detailed account of your experience in this area. All responses will be anonymous and confidential. Thank-you for your participation!
Survey Outline – 18 questions

PART 1: Community Pharmacy and Pharmacist Demographics – 7 Questions
PART 2: Expanded Scope of Practice and Physician Collaboration – 11 Questions

PART 1: Community Pharmacy Demographics

1. What type of centre is your community pharmacy located in
    a. Large urban community pharmacy (population >100,000)
    b. Medium urban community pharmacy (population 30,000-99,999)
    c. Small urban community pharmacy (population 5000-29,999)
    d. Rural community pharmacy (population < 5000)
    e. Remote/isolated community pharmacy (a large distance from a larger settlement or lacks transportation links
    f. Other - Explain

2. Choose which best describes your community pharmacy practice location
    a. Within the same building as a physician clinic
    b. Directly beside a physician clinic
    c. Within 2 blocks of a physician's clinic
    d. In the same town/city as a physician clinic
    e. Not in the same town/city as a physician clinic

3. What is the average number of prescriptions your pharmacy does per day?
    a. < 50
    b. 51-99
    c. 100-199
    d. 200-299
    e. 300-499
    f. Over 500

4. How many pharmacists are typically working on staff during an 8-hour daytime shift during the weekday?
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5 or more

5. How many support staff work at your pharmacy during a typical 8-hour shift?
    ___ Registered technicians
    ___ Non-registered pharmacy technicians
    ___ Pharmacy assistants

6. How many years have you been practicing as community pharmacist?
    a. Less than 6 months
    b. 6 months to 2 years
    c. 3-5 years
    d. 6-10 years
    e. 11-20 years
    f. Over 20 years

7. What is your current position. Select all that apply
    a. Floater pharmacist
    b. Staff pharmacist
    c. Clinical pharmacist
    d. Pharmacy manager
    e. Pharmacy owner

PART 2: Expanded Scope of Practice and Physician Collaboration Questions

For the purposes of this survey, the following terms are defined as such:

TRADITIONAL role of the pharmacist: activities such as processing, dispensing, compounding, prescription counselling, patient education, third party billing etc.

EXPANDED SCOPE OF PRACTICE: activities such as providing emergency prescription refills, renew/extend prescriptions, change drug dosage/formulation, making therapeutic substitutions, prescribing for minor ailments/conditions, initiating prescription drug therapy, ordering and interpreting lab tests, administering a drug by injection, medication assessments (e.g. SMAP), and smoking cessation services (PACT).

COLLABORATION: the action of working with someone to produce or create something.

EXCHANGES: any interaction with a physician including phone call, fax communication, email, electronic message, text message, email, or face-to-face interaction.

QUALITY: actions such as sharing information, making recommendations, decision making etc. that have the potential improve patient care outcomes or health system outcomes

1. Ranking question: Rank the top FIVE EXPANDED SCOPE OF PRACTICE activities you are MOST engaged in (1 – being the most)
    __ Provide emergency prescription refills
    __ Renew/extend prescriptions
    __ Change drug dosage/formulation
    __ Make therapeutic substitutions
    __ Prescribe for minor ailments/conditions
    __ Initiate prescription drug therapy
    __ Order and interpret lab tests
    __ Administer a drug by injection
    __ Medication Assessments (e.g. SMAP)
    __ Smoking cessation services (PACT)

2. Estimate on average what percentage of a typical 8-hour day you are involved in EXPANDED SCOPE OF PRACTICE activities compared to TRADITIONAL pharmacy activities
    a. Zero
    b. 1-24%
    c. 25-49%
    d. 50-74%
    e. 75%-100%

3. What is the main medium you use to collaborate with physicians?
    a. Phone
    b. Fax
    c. In-person
    d. Email or digital messages
    e. Text
    f. Round-table discussions with other health care professionals
    g. None

4. What has been the most effective medium of collaboration with physicians?
    h. Phone
    i. Fax
    j. In-person
    k. Email or digital messages
    l. Text
    m. Round-table discussions with other health care professionals
    n. None

5. Rank each statement on a scale of 1 to 5. 1 – Strongly disagree 2- Disagree 3 – Neutral 4 – Agree 5- Strongly agree

   COMPARED TO TRADITIONAL pharmacy EXCHANGES or COLLABORATIONS with physicians: EXPANDED SCOPE OF PRACTICE activities has:
   ___a. Increased the amount of information sharing with physicians about a patient's health and medication status
   ___b. Increased the amount I have initiated an exchange with physicians
   ___c. Resulted in more bilateral (back-and-forth) exchanges with physicians
   ___d. Increased the amount a physician has initiated an exchange with me
   ___e. Improved the relationship I have with physicians
   ___f. Created opportunity to work in partnership with a physician or group of physicians
   ___g. Increased the opportunity for a formalized agreement or practice collaborative agreement
   ___h. Increased my knowledge or understanding of physician's concerns, goals, and objectives

6. On a scale of 1 to 5 (1- low, 5 –high) estimate the QUANTITY of EXCHANGES or COLLABORATIONS with physicians for
   ___TRADITIONAL pharmacy activities
   ___EXPANDED SCOPE OF PRACTICE pharmacy activities

7. On a scale of 1 to 5 (1- low, 5 –high) estimate the QUALITY of EXCHANGES or COLLABORATIONS with physicians for
   ___TRADITIONAL pharmacy activities
   ___EXPANDED SCOPE OF PRACTICE pharmacy activities

8. Rank in the TOP 5 (1-most) EXPANDED SCOPE OF PRACTICE activities that have been most influential at improving or fostering collaboration with physicians
   __ Provide emergency prescription refills
   __ Renew/extend prescriptions
   __ Change drug dosage/formulation
   __ Make therapeutic substitutions
   __ Prescribe for minor ailments/conditions
   __ Initiate prescription drug therapy
   __ Order and interpret lab tests
   __ Administer a drug by injection
   __ Medication Assessments (e.g. SMAP)
   __ Smoking cessation services (PACT)
   __ NONE

9. What influence has EXPANDED SCOPE OF PRACTICE activities had on COLLABORATION with physicians? Explain

10. What has been the most effective strategy for COLLABORATION with physicians? Explain

11. Choose which BEST describes you or your pharmacies collaborate relationship with a physician(s)?
    a. A CPA (Collaborative practice agreement) to perform formalized through SCPP to perform activities or services
    b. A written agreement to perform activities or services
    c. A verbal agreement to perform activities or services
    d. No written or verbal agreement however a cooperative relationship in which we work well together on individual patients or tasks consistently
    e. Limited collaboration. Communication is one-sided and limited to technical matters related to filling prescriptions
    f. No collaboration. As professionals we work independently almost exclusively.
    g. Adversarial. There is often hostility, conflict, or opposition when dealing with physicians or physician groups

    Explain/comment

Appendix B: Community Pharmacists Letter of Invitation

Hello <Insert Pharmacist Name>,

My name is Amber Ly. I am a practicing community pharmacist currently working on my Master's degree through the College of Education's Educational Administration program at the University of Saskatchewan. I am conducting a research study exploring if changes to pharmacists' scope of practice have influenced collaboration with physicians.

As you are aware, our professional role has expanded dramatically over the last ten years. Coupled with the implementation of expanded scope of practice activities are expectations of physician collaboration. However, there is limited information about how these changes have affected collaboration with physicians, particularly from a community pharmacist's perspective. I am hopeful to gain insight from pharmacists working in the community pharmacies throughout Saskatchewan by inviting them to share their opinions and experiences via a short online questionnaire.

Information garnered in this area could identify effective strategies for improved collaboration with physicians within the community pharmacy setting. Additionally, it may guide further legislative changes and practice guidelines connected to expansion of the pharmacists' role. The results will give a voice to community pharmacists in Saskatchewan and may have the potential to improve the current state of pharmacy practice in our province or possibly foster further research in this area.

In the next week, you will be sent an email distributed by SCPP (Saskatchewan College of Pharmacy Professionals) via your email listed in your registration, requesting participation in the questionnaire. To participate just click onto the link in the email which will take you to the online questionnaire. The questionnaire should take no more than 15-20 minutes. The questionnaire will create anonymous identification codes for the participants and this code will be used to link participants' questionnaires for subsequent analyses. This data will be analyzed, however will be free of any personal identifiers. SCPP, myself, your employer, physicians or health clinics will have NO knowledge of how specific pharmacists responded. Participation in this questionnaire is voluntary, and you can decide not to participate at any time by closing your browser. Questionnaire responses will remain anonymous. Since the questionnaire is anonymous, once it is submitted it cannot be removed. By completing and submitting this questionnaire, your free and informed consent is implied and indicates that you understand the above conditions of participation in this study.

Those who participate in the questionnaire will be sent a summary of the research findings from the study if desired AND may win a $100 Tim Hortons OR Starbucks gift card. This information will be stored separately and will NOT be linked in any way to the answers you provided in the questionnaire. Thank you once again for your consideration for participating in this important and timely topic.

If you have further questions or would prefer a paper copy of the questionnaire sent to you, please email me at amber.ly@usask.ca. Alternatively you may phone my supervisor, Dr. Vicki Squires at 306-966-7622.

Appendix C: Community Pharmacists First Email Invitation

UNIVERSITY OF SASKATCHEWAN

Participant Recruitment Form

Hello

My name is Amber Ly. I am a practicing community pharmacist who is currently working on my Master's degree through the College of Education's Educational Administration program at the University of Saskatchewan. I am conducting a research study exploring if changes to pharmacists' scope of practice have influenced collaboration with physicians. Last week, you should have received a letter to let you know about this upcoming electronic questionnaire.

Purpose of the Study: The purpose of the study is to determine how changes to Saskatchewan pharmacists' scope of practice have influenced the interprofessional collaborative relationship between community pharmacists and physicians. Additionally, the study will gather data on the types of expanded scope of practice activities and collaborations community pharmacists are currently involved in, and obtain perspectives on strategies to improve collaboration.

For more information about this study please contact:
Amber Ly: amber.ly@usask.ca or
Vicki Squires, Assistant Professor, Department of Educational Administration
306-966-7622 or vicki.squires@usask.ca

Procedures:
As a participant in this study, you are asked to fill out an online questionnaire. It should take approximately 15 minutes to complete. Your participation in this study is completely voluntary. You may choose to discontinue the survey at any point by closing your browser. Once the questionnaire is submitted, the data cannot be removed.

Compensation:
As an incentive to participate your name will be entered into a draw a $100 Tim Horton's or Starbucks gift card. If you choose to enter the draw, you will click on a link at the end of the questionnaire that takes you to a separate document that is NOT linked to your responses. You can record your personal information within this separate document to be entered in the draw.

Potential Risks:
There are no known or anticipated risks to you by participating in this research.

Potential Benefits:
Community pharmacists can offer valuable insight into how expansion of their role has affected collaboration with physicians, and offer ideas and strategies for more robust collaboration. Your thoughts on the questions will contribute to an overall understanding of Saskatchewan's community pharmacists' collaborative experiences. A final report, using aggregated data, will be available through Saskatchewan College of Pharmacy Physicians (SCPP)'s website when the study is completed.

Confidentiality:
The data will be treated confidentially. All findings will be presented in an anonymized fashion. This data will be analyzed, free of any personal identifiers. SCPP, the researcher, their employer, physicians or health clinics will have no knowledge of how specific pharmacists responded. The raw data will be stored on Survey Monkey's servers (on a Canadian server, by an American firm); as an institutionally supported survey tool, Survey Monkey is accessed through the U of S secure portal. Once the questionnaire is complete, the file of raw data may be downloaded onto the University of Saskatchewan cabinet (university server) into a password protected file for the student researcher and her supervisor.

The link to the questionnaire is found below. By completing and submitting the questionnaire, **YOUR FREE AND INFORMED CONSENT IS IMPLIED** and indicates that you understand the above conditions of participation in this study.

Questionnaire Link: https://www.surveymonkey.ca/r/5PQPDCK

****Please Note that your web browser is going to ask your permission to proceed to this website. Survey Monkey is a valid and confidential data collection tool employed by the University of Saskatchewan. If you have any concerns please contact me.

You may choose to discontinue the survey at any point by closing your browser.

This research project has been approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board (BEH # 1212). Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

Thank you for your consideration.

Appendix D: Community Pharmacists Second Email Invitation

UNIVERSITY OF SASKATCHEWAN

Participant Recruitment Form

Hello

My name is Amber Ly. Approximately 10 days ago, SCPP sent an email inviting you to complete a questionnaire. I would really appreciate your feedback. If you have already completed this questionnaire, I thank you so much for your support. If you have not had time to complete it yet, I would be grateful for your participation.

I am a practicing community pharmacist who is currently working on my Master's degree through the College of Education's Educational Administration program at the University of Saskatchewan. I am conducting a research study exploring if changes to pharmacists' scope of practice have influenced collaboration with physicians.

Purpose of the Study: The purpose of the study is to determine how changes to Saskatchewan pharmacists' scope of practice have influenced the interprofessional collaborative relationship between community pharmacists and physicians. Additionally, the study will gather data on the types of expanded scope of practice activities and collaborations community pharmacists are currently involved in, and obtain perspectives on strategies to improve collaboration.

For more information about this study please contact:
Amber Ly: amber.ly@usask.ca or
Vicki Squires, Assistant Professor, Department of Educational Administration
306-966-7622 or vicki.squires@usask.ca

Procedures:
As a participant in this study, you are asked to fill out an online questionnaire. It should take approximately 15 minutes to complete. Your participation in this study is completely voluntary. You may choose to discontinue the questionnaire at any point by closing your browser. Once the questionnaire is submitted, the data cannot be removed.

Compensation:
As an incentive to participate your name will be entered into a draw a $100 Tim Horton's or Starbucks gift card. If you choose to enter the draw, you will click on a link at the end of the questionnaire that takes you to a separate document that is NOT linked to your responses. You can record your personal information within this separate document to be entered in the draw.

Potential Risks:
There are no known or anticipated risks to you by participating in this research.

Potential Benefits:
Community pharmacists can offer valuable insight into how expansion of their role has affected collaboration with physicians, and offer ideas and strategies for more robust collaboration. Your thoughts on the questions will contribute to an overall understanding of Saskatchewan's community pharmacists'

collaborative experiences. A final report, using aggregated data, will be available through Saskatchewan College of Pharmacy Physicians (SCPP)'s website when the study is completed.

Confidentiality:
The data will be treated confidentially. All findings will be presented in an anonymized fashion. This data will be analyzed, free of any personal identifiers. SCPP, the researcher, their employer, physicians or health clinics will have no knowledge of how specific pharmacists responded. The raw data will be stored on Survey Monkey's servers (on a Canadian server, by an American firm); as an institutionally supported survey tool, Survey Monkey is accessed through the U of S secure portal. Once the questionnaire is complete, the file of raw data may be downloaded onto the University of Saskatchewan cabinet (university server) into a password protected file for the student researcher and her supervisor.

The link to the questionnaire is found below. By completing and submitting the questionnaire, **YOUR FREE AND INFORMED CONSENT IS IMPLIED** and indicates that you understand the above conditions of participation in this study.

Questionnaire Link: https://www.surveymonkey.ca/r/5PQPDCK

****Please Note that your web browser is going to ask your permission to proceed to this website. Survey Monkey is a valid and confidential data collection tool employed by the University of Saskatchewan. If you have any concerns please contact me.

You may choose to discontinue the questionnaire at any point by closing your browser.

This research project has been approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board (BEH # 1212). Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

Thank you for your consideration.

Appendix E: Community Pharmacists Third and Final Email Invitation

UNIVERSITY OF SASKATCHEWAN

Participant Recruitment Form

Hello

My name is Amber Ly. Within the last month, SCPP has sent two emails inviting you to complete a questionnaire. I would really appreciate your feedback. **If you have already completed this survey, I thank you so much for your support.** If you have not had time to complete it yet, I would be so grateful for your participation. **This email will be the final reminder to complete the questionnaire.**

I am a practicing community pharmacist who is currently working on my Master's degree through the College of Education's Educational Administration program at the University of Saskatchewan. I am conducting a research study exploring if changes to pharmacists' scope of practice have influenced collaboration with physicians.

Purpose of the Study: The purpose of the study is to determine how changes to Saskatchewan pharmacists' scope of practice have influenced the interprofessional collaborative relationship between community pharmacists and physicians. Additionally, the study will gather data on the types of expanded scope of practice activities and collaborations community pharmacists are currently involved in, and obtain perspectives on strategies to improve collaboration.

For more information about this study please contact:
Amber Ly: amber.ly@usask.ca or
Vicki Squires, Assistant Professor, Department of Educational Administration
306-966-7622 or vicki.squires@usask.ca

Procedures:
As a participant in this study, you are asked to fill out an online questionnaire. It should take approximately 15 – 20 minutes to complete. Your participation in this study is completely voluntary.
You may choose to discontinue the questionnaire at any point by closing your browser. Once the questionnaire is submitted, the data cannot be removed.

Compensation:
As an incentive to participate your name will be entered into a draw a $100 Tim Horton's or Starbucks gift card. If you choose to enter the draw, you will click on a link at the end of the questionnaire that takes you to a separate document that is NOT linked to your responses. You can record your personal information within this separate document to be entered in the draw.

Potential Risks:
There are no known or anticipated risks to you by participating in this research.

Potential Benefits:
Community pharmacists can offer valuable insight into how expansion of their role has affected collaboration with physicians, and offer ideas and strategies for more robust collaboration. Your thoughts on the questions will contribute to an overall understanding of Saskatchewan's community pharmacists' collaborative experiences. A final report, using aggregated data, will be available through Saskatchewan College of Pharmacy Physicians (SCPP)'s website when the study is completed.

Confidentiality:
The data will be treated confidentially. All findings will be presented in an anonymized fashion. This data will be analyzed, free of any personal identifiers. SCPP, the researcher, their employer, physicians or health clinics will have no knowledge of how specific pharmacists responded. The raw data will be stored on Survey Monkey's servers (on a Canadian server, by an American firm); as an institutionally supported survey tool, Survey Monkey is accessed through the U of S secure portal. Once the questionnaire is complete, the file of raw data may be downloaded onto the University of Saskatchewan cabinet (university server) into a password protected file for the student researcher and her supervisor.

The link to the questionnaire is found below. By completing and submitting the questionnaire, **YOUR FREE AND INFORMED CONSENT IS IMPLIED** and indicates that you understand the above conditions of participation in this study.

Questionnaire Link: https://www.surveymonkey.ca/r/5PQPDCK

****Please Note that your web browser is going to ask your permission to proceed to this website. Survey Monkey is a valid and confidential data collection tool employed by the University of Saskatchewan. If you have any concerns please contact me.

You may choose to discontinue the questionnaire at any point by closing your browser.

This research project has been approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board (BEH #1212). Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

Thank you for your consideration.

Appendix F: Summary of Research Findings and Recommendations Brochure

THE INFLUENCE OF PHARMACISTS' EXPANDED SCOPE OF PRACTICE ON PHYSICIAN COLLABORATION IN COMMUNITY PHARMACY

SUMMARY OF RESEARCH FINDINGS AND RECOMMENDATIONS

AMBER LY BSC BSP MED

Thank you for your participation in this study and for taking the time to share your experiences and opinions on the influence of pharmacists' Expanded Scope of Practice (ESoP) on collaboration with physicians.

Included in this document is the study's abstract, relevant study details, major research findings, summary, and practice recommendations for your consideration.

Further study details may be obtained by accessing the complete thesis paper through the link XXXXXXX.

ABSTRACT

The Canadian Healthcare System is overburdened and requires fundamental changes for its continued sustainability. One possible solution is healthcare professionals working more collaboratively and to their maximum scope of practice. Saskatchewan pharmacists have had significant expansion in their scope of practice in the last decade and correspondingly, expectations of collaboration. This study's primary objective was to explore the influence of pharmacists' expanded scope of practice (ESoP) on physician collaboration in the community pharmacy setting. This thesis proposes a new model, the Community Pharmacists Collaboration Model (CPCM), for analysis of community pharmacists' collaboration derived from the Collaborative Working Relationship, Hudson's, Artimage's, and Spectrum of Collaboration models. It uses this model to examine collaboration in the context of a community pharmacy setting, taking into consideration pharmacy partnerships and Collaborative Practice Agreements.

An online questionnaire was emailed to all 1165 practicing community pharmacists in Saskatchewan. The questionnaire acquired data on: participant demographics, ESoP engagement, most beneficial activities, influence on physician collaboration, and strategies for fostering collaboration. The questionnaire response rate was 15.7%. Pharmacists suggested ESoP positively influenced communication and collaboration, pharmacist utilization, clinical management, and pharmacist-physician relationships. ESoP may play a role at increasing the frequency and quality of exchanges between pharmacists and physicians, however, did not appear to improve the opportunity for verbal or written agreements. The most effective strategy identified for fostering collaboration was maximizing exchanges with physicians, especially verbal exchanges. Lack of physician engagement and restrictions to direct communication channels with physicians were hindrances.

Pharmacists' utilization of ESoP activities and its subsequent correspondence may be an avenue in which to improve collaboration with physicians. The CPCM model could prove to be a useful tool to aide in the understanding of collaborative practice in the community pharmacy setting. Further exploration into community pharmacy collaboration, particularly regarding physician engagement will prove advantageous.

STUDY DETAILS

INTRODUCTION

BACKGROUND

- The Canadian healthcare system is under pressure for its continued sustainability. Expansion of healthcare professionals roles and improved interprofessional collaboration are possible solutions. Recent expansion of pharmacists' scope of practice may provide an opportunity for enhanced collaboration with physicians.

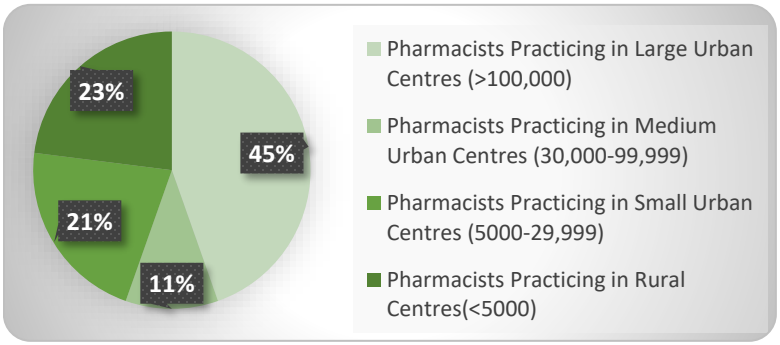
STUDY OBJECTIVE

- To determine what influence expansion of pharmacists' scope of practice has had on collaboration with physicians in the community pharmacy setting throughout Saskatchewan from community pharmacists' perspective.

STUDY DESIGN – QUANTITATIVE

Participant sample	Study Tool	Response rate
1165 practicing community pharmacists	Online questionnaire	183 responses 16% response rate

PARTICIPANT CHARACTERISTICS (N=183)



Pharmacist Experience: 57% >11 years of pharmacy experience

Average Pharmacy Prescription Volume: 200 - 500+ Rx/day

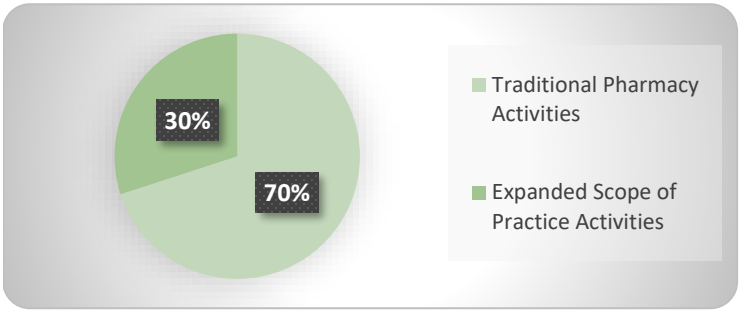
Pharmacist Position: 53% staff pharmacists 25% managers 11% owners 6% floaters 5% clinical pharmacists

Pharmacy Proximity to Clinic:
Most not within or directly attached to a physician clinic

RESEARCH FINDINGS

SUMMARY OF MAJOR FINDINGS

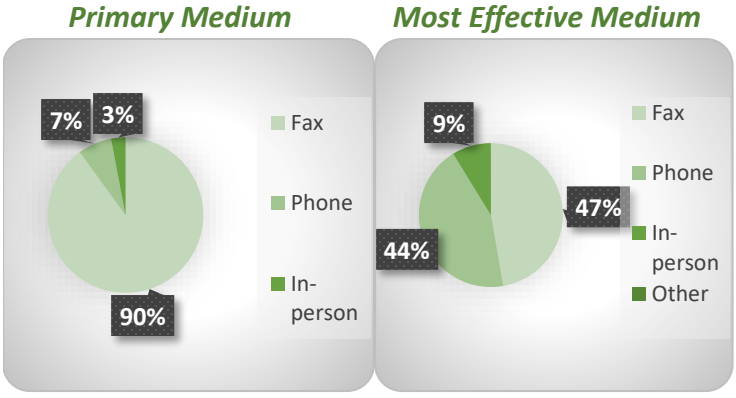
What percentage of time in a typical 8 hour shift does the average pharmacists spend providing Expanded Scope of Practice services?



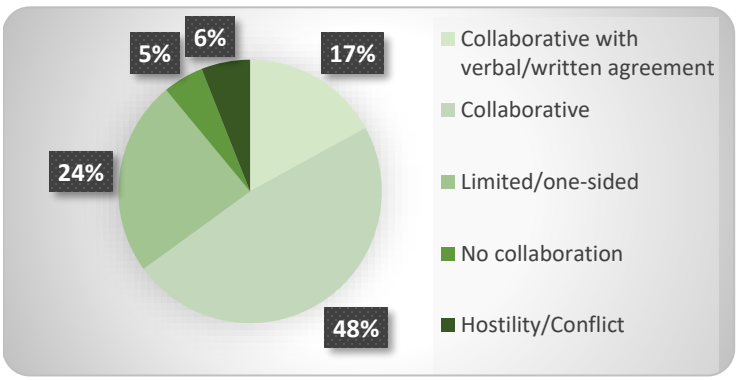
Which Expanded Scope of Practice activities were the most beneficial for fostering collaboration with physicians?

- MEDICATION ASSESSMENTS
- MINOR AILMENT PRESCRIBING
- RENEWING & EXTENDING RXS
- THERAPEUTIC SUBSTITUTIONS

What was the primary medium and most effective medium pharmacists used for collaboration with physicians?

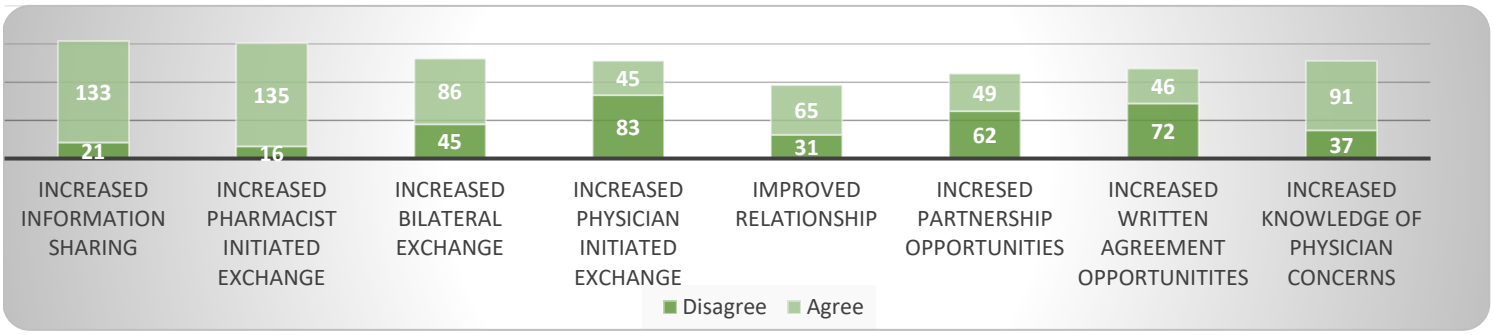


How do community pharmacists classify their relationship with physicians?

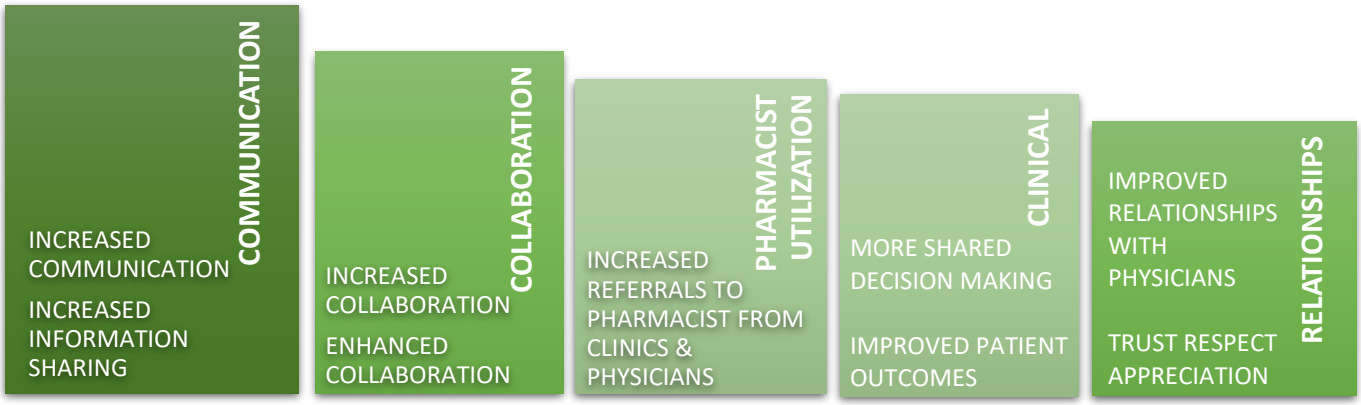


RESEARCH FINDINGS

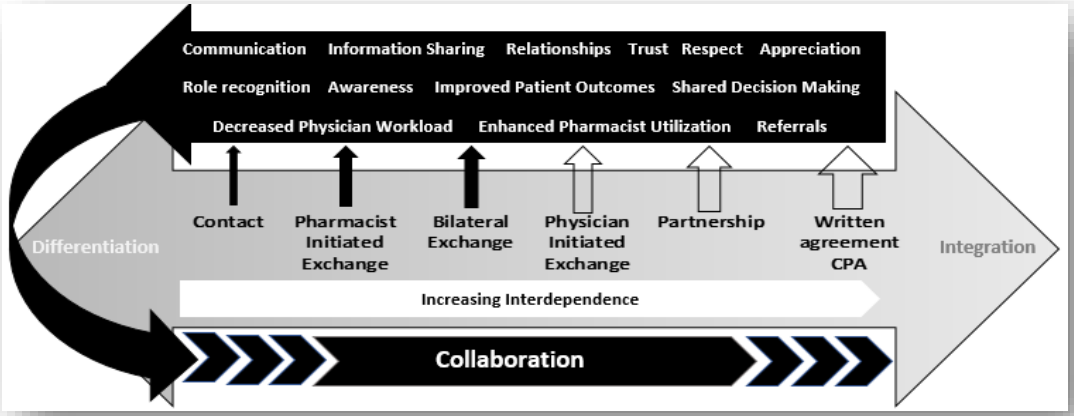
How many pharmacists agreed versus disagreed with the following statements regarding the influence of Expanded Scope of Practice on physician collaboration?



What were the top five most common responses on the influence of Expanded Scope of Practice to collaboration with physicians?

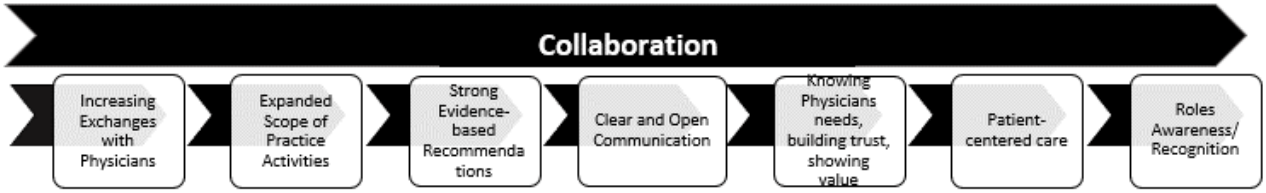


What do the study results look like when applied to the Community Pharmacists Collaboration Model (CPCM)?



Expanded scope of practice activities appear to increase contact, pharmacist initiated exchanges and bilateral exchanges with physicians. In the exchange process, bi-products of attributes considered valuable for collaboration are produced, which in-turn promote collaboration.
A positive feedback loop is formed inducing collaboration closer towards integration and further away from differentiation.

What strategies did pharmacists indicate were most effective for fostering collaboration with physicians?



What did pharmacists report as the main hindrances to collaboration with physicians?

Lack of physician engagement and participation in pharmacists collaboration efforts

Physician clinics limiting pharmacists collaboration efforts by restricitng direct verbal communication with physicians and accepting only fax communication

SUMMARY & PRACTICE RECOMMENDATIONS

SUMMARY

The results of this study support the notion that many community pharmacists seem interested in collaborating and appear engaged in the process. Most pharmacists view their relationship with physicians in a positive light in which they work well together in a coordinated and collaborative manner. Few pharmacists believe there is no collaboration occurring between the two parties or that the relationship is adverse or marked with hostility. Further, it appears that most community pharmacists are implementing Expanded Scope of Practice (ESoP) activities into their daily workload. Data indicates that as pharmacists become more involved in providing ESoP activities, the more likely they perceive them as positive or valuable for collaboration. They are also more likely to classify their relationship with physicians as a collaborative compared to pharmacists who are less engaged.

The findings suggest that community pharmacists' involvement in ESoP may improve communication and collaboration with physicians and could possibly support goals of improved patient and health systems outcomes. ESoP activities that are more clinical and patient centered compared to traditional activities may be better received by physicians than traditional exchanges, and thereby help encourage more collaboration. Increasing the frequency and quality of exchanges with physicians could play a role at fostering attributes considered important for improved collaboration such as relationship development, professional interactions, role recognition and awareness, and understanding physicians' needs. The data suggest that ESoP may be an avenue that pharmacists can practically implement to encourage more collaboration, achieve more robust collaboration, or use to help develop foundational principles for advancing collaboration.

The study also indicates that pharmacist engagement in ESoP alone may not be enough to secure the richest form of collaboration such as partnerships, Collaborative Practice Agreement (CPA) or other written commitments for both parties to work in a formalized and interdependent manner. It draws attention to the notion that there is a need to engage physicians more in the process and have them more actively utilizing pharmacists' newly expanded roles. If community pharmacists are going to continue to positively influence collaboration with physicians and move towards integration of services, they need to identify how to enhance physician engagement and formalize the commitment to work together in the form of verbal, written agreements, or CPAs.

PRACTICE RECOMMENDATIONS

Expanded scope of practice activities may be an avenue to enhance collaboration with physicians. Maximizing communication of these activities with physicians with effective verbal or written communication may prove advantageous.

Increasing the frequency and quality of exchanges toward integration, especially when done through verbal medium channels (such as the phone or in-person) may assist in fostering attributes deemed valuable for collaboration.

Attributes identified as valuable for collaboration were effective communication, relationship building, role recognition and awareness, utilizing professional and clinical skill set, understanding physician needs.

Expanded scope of practice activities alone may not be enough to secure partnerships, written agreements and CPAs. Improving physician engagement and accessing direct communication channels may be beneficial.